DriveOhio
The Future of Smart Mobility

NEVI Formula Program

August 1, 2023

Ohio Electric Vehicle INFRASTRUCTURE DEPLOYMENT PLAN

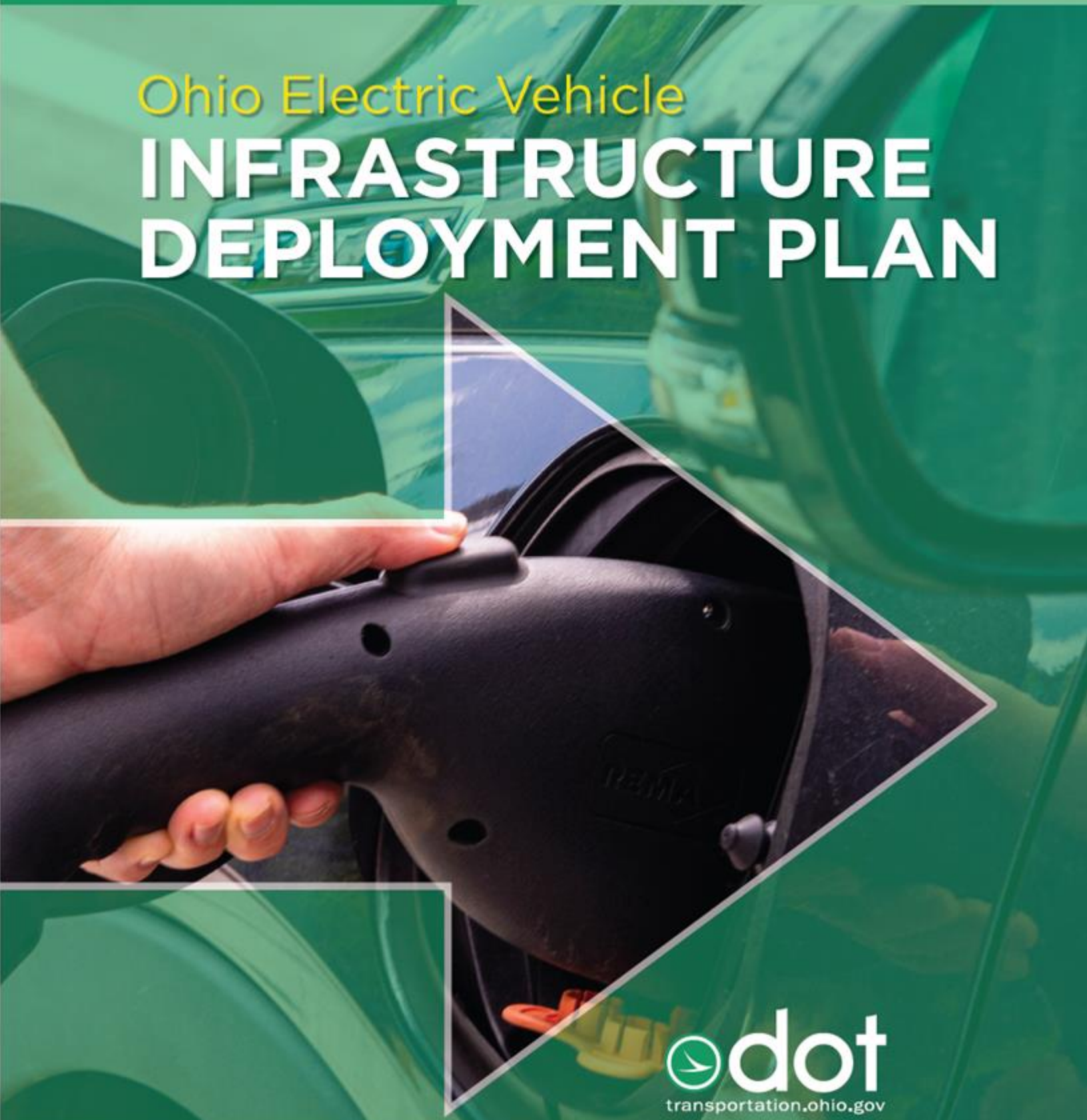

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Table 1: Abbreviations and Acronyms

Abbreviation or Acronym	Definition
AADT	Annual Average Daily Traffic
AFC	Alternative Fuel Corridor
AFV	Alternative Fuel Vehicle
BIL	Bipartisan Infrastructure Law
BMV	Bureau of Motor Vehicles
BEV	Battery Electric Vehicle
CAM	Cathode Active Materials
CCS	Combined Charging System
CFR	Code of Federal Regulations
CNG	Compressed Natural Gas
DAC	Disadvantaged Community
DAS	Department of Administrative Services
DCFC	Direct Current Fast Charger
EDC	Electric Distribution Companies
PHEV	Plug-in Hybrid Electric Vehicle
EPA	Environmental Protection Agency
EV	Electric Vehicle
EVSE	Electric Vehicle Supply Equipment
FCV	Fuel Cell Vehicle
FHWA	Federal Highway Administration
ICE	Internal Combustion Engine
Joint Office	Joint Office of Energy and Transportation
LNG	Liquified Natural Gas
LPG	Liquified Petroleum Gas
MORPC	Mid-Ohio Regional Planning Organization
NEPA	National Environmental Policy Act
NEVI	National Electric Vehicle Infrastructure
NIST	National Institute of Standards and Technology
NRDC	Natural Resources Defense Council, Inc.
NRTL	Nationally Recognized Testing Laboratory
MPO	Metropolitan Planning Organization
OCPP	Open Charge Point Protocol
ODOT	Ohio Department of Transportation
OEC	Ohio Environmental Council
OEM	Original Equipment Manufacturer
OWT	Governor's Office of Workforce Transformation
RTPO	Rural Transportation Planning Organization
RFP	Request for Proposals
R.C.	Revised Code
REC	Rural Electric Cooperative
SSO	Standard Service Offering
STIP	Statewide Transportation Improvement Program
TIP	Transportation Improvement Program
US DOE	United States Department of Energy
US DOT	United States Department of Transportation
VW	Volkswagen

Source: DriveOhio

Chapter 1 Introduction

National Electric Vehicle Infrastructure (NEVI) Formula Program: As part of the Bipartisan Infrastructure Law (BIL), the NEVI Formula Program intends to make historic investments, $7.5 billion, in electric vehicle (EV) charging infrastructure that will put the United States on a path to a nationwide network of 500,000 EV chargers by 2030 and ensure a convenient, reliable, affordable, and equitable charging experience for all users. The $7.5 billion is divided between a $5 billion Formula program and $2.5 billion discretionary grant program. The discretionary grant program is split evenly between corridor charging ($1.25 billion) and community charging ($1.25 billion). For the $5 billion Formula program each state is required to submit an EV Infrastructure Deployment Plan (Plan) that describes how the State intends to use its apportioned NEVI funds in accordance with guidance from the Federal Highway Administration (FHWA).

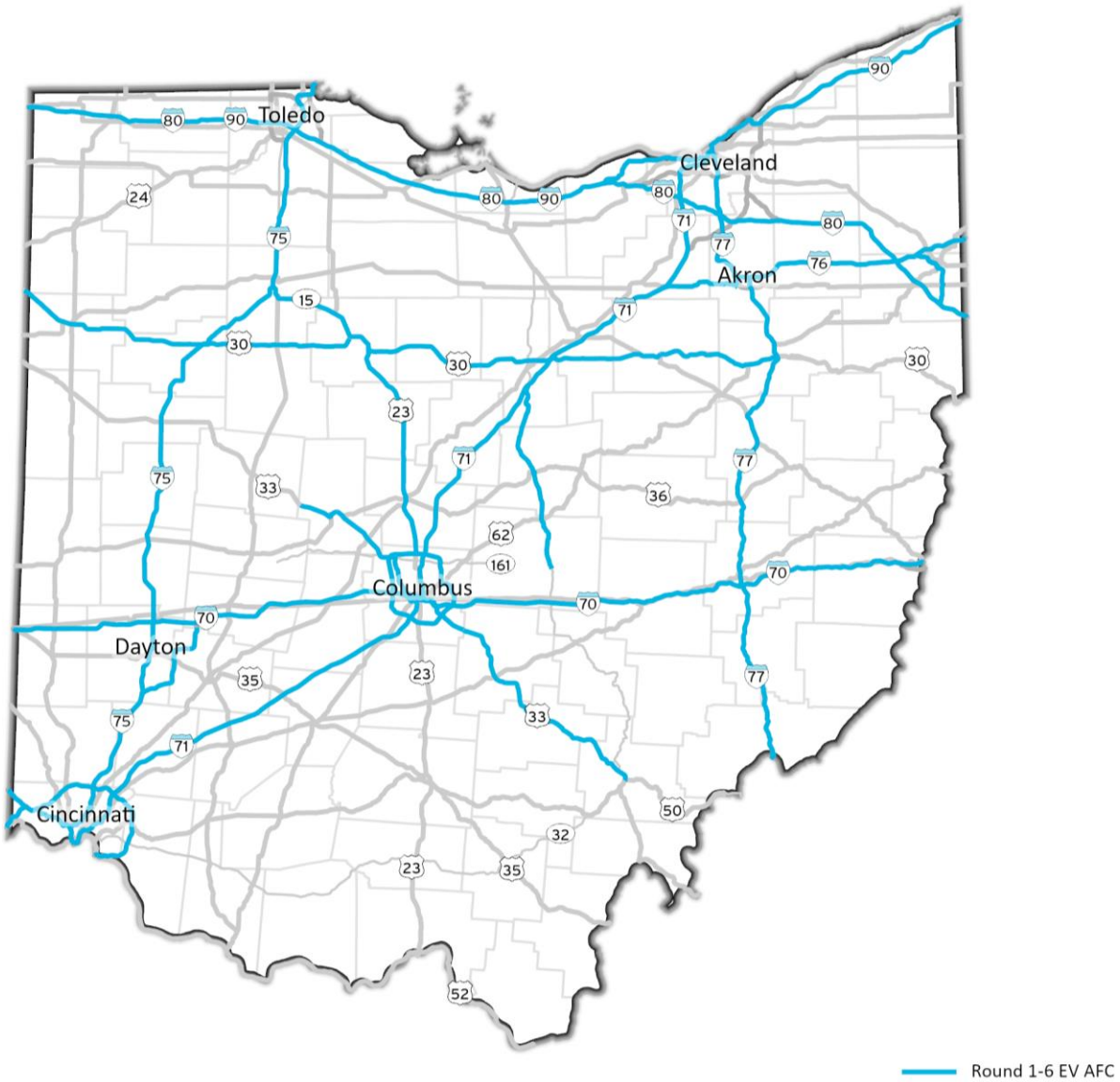

Figure 1: Alternative Fuel Corridors in Ohio
Source: DriveOhio

Ohio NEVI Formula Funding: Ohio is allocated $140 million over the five-year program to create an EV charging network across the state. Funds must initially be used to deploy EV charging stations to cover 1,867 miles of Ohio's FHWA Designated EV Alternative Fuel Corridors (AFCs). The US Department of Transportation (US DOT) Secretary will certify corridors "fully built out" once they determine they are completed to NEVI compliant standards. Once Ohio's AFCs are declared by FHWA to be "fully built out" Ohio can use the remaining NEVI Formula funds for publicly available Electric Vehicle Supply Equipment (EVSE) Charging Stations.

Table 1: Ohio NEVI Five Year Funding

Actual FY 2022	Actual FY 2023	Estimated FY 2024	Estimated FY 2025	Estimated FY 2026	Estimated Total
$20,739,853	$29,844,883	$29,845,089	$29,845,114	$29,845,177	$140,120,116

Source: DriveOhio

ODOT EV Resources: Since mid-2019 the Ohio Department of Transportation (ODOT) has supported the EV transition through education, state level, local, and industry outreach, data analysis and sharing, and strategy development. The outcomes of some of these efforts are available at www.drive.ohio.gov:

- DriveOhio 2020 Electric Vehicle Charging Study
- DriveOhio 2021 Freight Electrification Study
- Ohio Alternative Fuel Vehicle Registration Dashboard

Ohio NEVI Plan Purpose: The Ohio NEVI Plan will serve as the foundational guiding document that facilitates administration of Ohio's portions of the federal NEVI Formula funding program. ODOT's NEVI Plan seeks to ensure Ohio's full participation in building a national EV charging network by creating EV charging corridor stations across the state and in coordination with all adjacent states.

Ohio NEVI Plan Development Process: The Ohio NEVI Plan development was led by ODOT's DriveOhio Program staff in coordination with numerous partners and stakeholders. These NEVI plan development and input partners included state agencies, Metropolitan Planning Organizations (MPOs), Rural Transportation Planning Organizations (RTPOs), utilities, and numerous public stakeholders representing the majority of the FHWA recommended stakeholder groups from the February 10, 2022, guidance. The Ohio NEVI Plan presented reflects input ODOT received from these stakeholders and anticipates continued engagement with these partners throughout the NEVI funding disbursement and EVSE deployment period. Ohio's NEVI Plan will continue to be refined and updated annually to reflect the evolving plans and incorporate lessons learned in this emerging and evolving market.

Ohio NEVI Plan Vision: ODOT's vision for the NEVI Plan is to develop a comprehensive framework to enable EV travel across the state and spur economic development. The network will give drivers initial confidence and flexibility when driving Ohio's roads for personal, professional, or recreational purposes, regardless of distance traveled, location, or weather conditions.

Ohio NEVI Plan Goals: ODOT's goals for the NEVI Plan, in accordance with FHWA guidance, will focus on building out FHWA Designated AFCs first, then broaden to meet additional needs. ODOT's key NEVI Plan goals are summarized below:

- Goal #1: Comprehensive EVSE Planning: Create an EVSE charging plan to guide a convenient, reliable, affordable, and equitable charging experience for Ohio motorists.
- Goal #2: Program Implementation & Administration: Utilize NEVI funds to catalyze the Ohio market through third party partnerships to own and operate EVSE.
- Goal #3: Data Tracking & Evaluation: Ensure Ohio tracks relevant data on NEVI funded EVSE charging stations and related performance metrics to ensure that the charging network meets FHWA standards of access, reliability, and convenience.

1.1 State Plan Timeline for EV Infrastructure Deployment, Development and Adoption

After the Joint Office certifies Ohio's AFCs as "fully built out" to NEVI compliant standards, ODOT may seek to bolster AFC deployments and will expand deployments beyond the AFCs as generally indicated by Phase III and Phase IV in **Figure 2**.

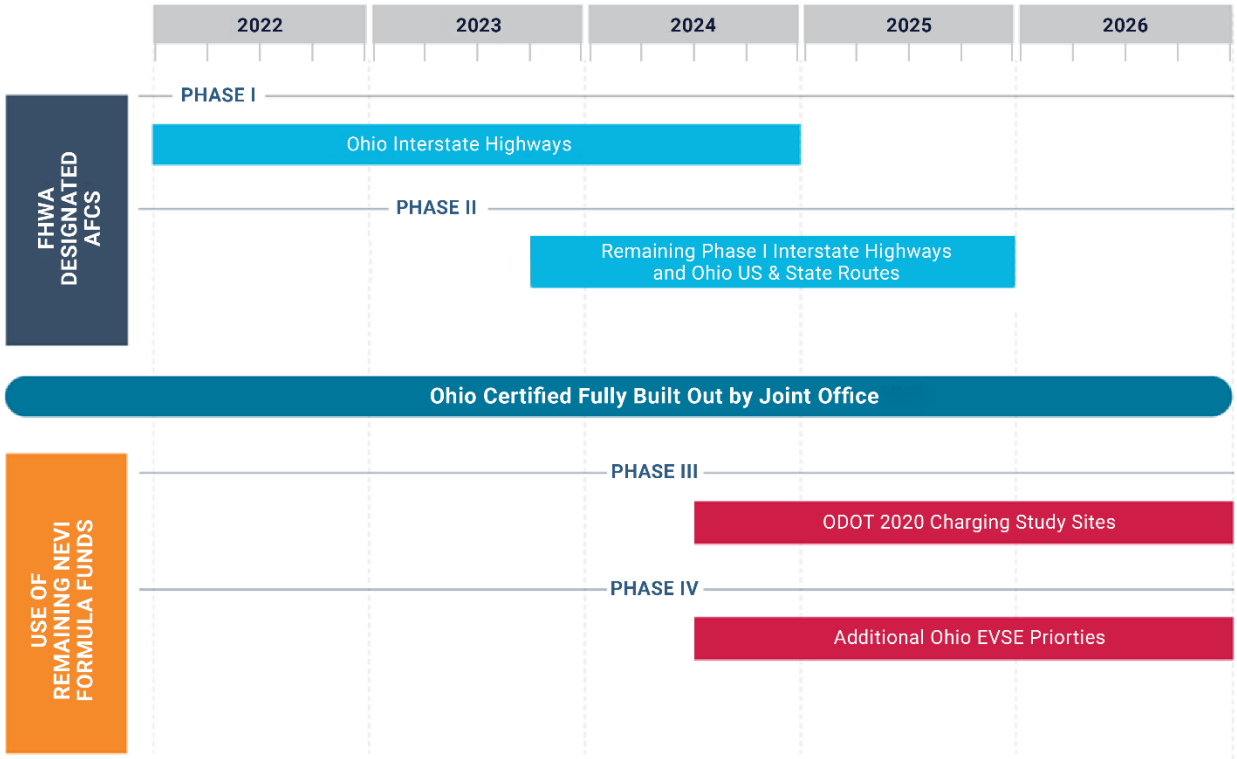

Figure 2: Timeline for NEVI Deployment
Source: DriveOhio

Milestones associated with Phase I of this timeline are shown in **Figure 3**. Similar milestones will be repeated in subsequent phases of the program as the program progresses.

ODOT will continue to work with the Joint Office of Energy and Transportation (Joint Office), FHWA Division Office, State of Ohio agencies, and stakeholders as described in the sections below to continue to gain needed feedback, input, and make updates to this timeline and plan throughout the NEVI Formula funding program performance period.

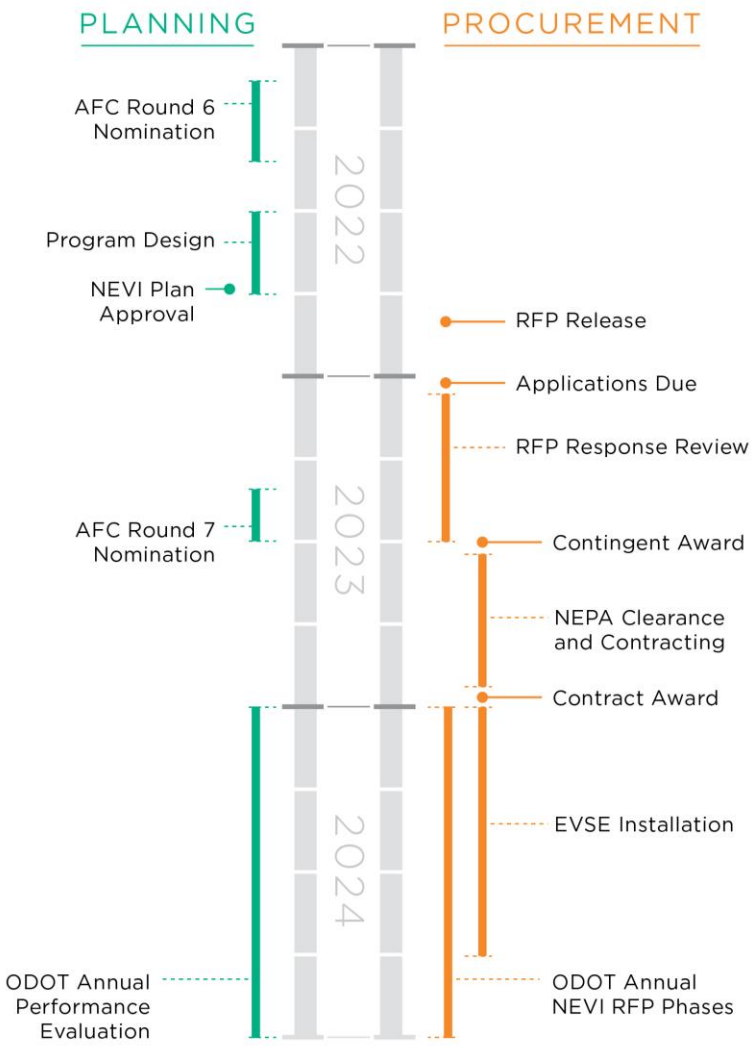

Figure 3: Anticipated Ohio NEVI Milestones
Source: DriveOhio

Chapter 2 State Agency Coordination

ODOT has actively engaged intra-departmental divisions in planning and directly coordinated with the Ohio Governor's Office and multiple state agencies as described throughout this section. This chapter captures the roles and interests of the various entities, details the engagement activities to date, and summarizes these partners' roles, interests, and impacts on the NEVI planning and deployment processes. The three categories for state level partner engagement are: 1) Internal ODOT Division Coordination; 2) State Agency Coordination; and 3) Ohio Governor's Office of Workforce Transformation.

Goals for Internal ODOT Division and State Agency Coordination

- Identify how EV deployment will impact ODOT divisions and operations
- Establish roles and technical support needed for each division for EVSE deployment
- Integrate division personnel in NEVI Plan development, review, and annual updates
- Identify ongoing engagement activities for NEVI five-year deployment
- Provide technical content for ongoing collaboration and NEVI program management

Summary of Internal ODOT Coordination

Table 2 summarizes internal roles and engagement activities at ODOT by office.

Table 2: Internal Roles at ODOT

Office	Role & Engagement Activities
Alternative Project Delivery	Advise on procurement options
Budget & Forecasting	Review 5-year spending plan
Chief Legal Counsel	Provide guidance on options for match funds and Title 23 implementation for NEVI and overall support in development of the P3 agreement
DriveOhio	NEVI lead and advisor on workforce efforts
Statewide Planning & Research	Provide connection to other statewide plans, including coordination with MPOs
Traffic Operations	Provide traffic data including trends
Transit	Advise on state transit programs and assist with transit agency coordination
Opportunity, Diversity, and Inclusion (ODI)	Advise on ODI aspects of NEVI planning & deployment
Environmental Services	Advise on and support environmental clearance of EVSE sites
Real Estate	Advise on and support real estate procurement and delivery process

Source: DriveOhio

Summary of State Agency and Governor's Office Coordination

In January of 2020, ODOT Director Marchbanks brought together his peers from several state agencies to inform them about the Electric Vehicle Charging Study ODOT was working on and ask for their support in EV planning. Over the course of the next several months representatives from these agencies met regularly to define what role they would each play in advancing the electric vehicle ecosystem in Ohio. In preparation for the NEVI Plan, ODOT has updated their state agency partners. **Table 3** summarizes their roles, interests, impacts, and engagement activities – specific to NEVI – by agency.

Table 3: Ohio EV Charging Collaborators

Agency	Roles	Interests and Impacts
	Mapping, Planning, Program Management (Contracting, right of way, NEPA, Procurement, Inspection, Disbursement, Reporting)	Five-year program management of all program aspects
	Utility Coordination, Direction, Regulation	Biggest impacts are whether EVSE site hosts can charge fees per kWh dispensed and if utilities can own/operate an EVSE network with electricity rates charged to site hosts of EVSE
	Vendor prequalification, Contracting, Procurement, State Bid list	State term contract for EVSE equipment, opportunities for ODOT and DAS to collaborate on possible NEVI EVSE vendor prequalification work
	Road Tax / Gas Tax impacts of EVs	Discussion of how a significant shift to EVs impact revenue
	Tourism, state parks, destination charging locations	Discussed whether ODNR has key property or locations for EVSE on AFCs or beyond
	Economic development impacts. Additional assistance to developers / site hosts	Synergies with NEVI program and existing state economic development goals, programs, and NEVI investments
	Regulator: methods of sale, signage, measure, inspection of energy sold as motor fuel	Discussed standard requirements, type of measurement, types of fees, types of signage, funding for inspectors
	Workforce development office coordinating all state workforce development policies, program, and financial assistance	Discussed how NEVI Plan directly aligns with goals of Governor's Office of Workforce Transformation as described in **Chapter 11**
	The Ohio Environmental Protection Agency (EPA) has run the VW Settlement program for Ohio, $11.5M of which was allocated to EVSE	Discussed Ohio EPA's VW grant program decision, selection criteria, contract contents, and process for administering Direct Current Fast Charging (DCFC) awards to sites in Ohio

Source: DriveOhio

ODOT, as the lead Ohio Agency for the NEVI Program Formula funding, is actively engaging and coordinating with both intra-departmental divisions and state agency partners. To ensure effective communication and collaboration, ODOT has established a regular schedule of meetings with these stakeholders. The meetings take place monthly or quarterly, as needed, depending on the specific needs of each agency. During these meetings, ODOT is discussing updates, sharing information, and

addressing any concerns. This approach enables ODOT to foster strong working relationships with its partners, ensuring that each agency is aligned in their efforts to maximize the impact of the NEVI program throughout Ohio. The meetings that have been held as part of the annual plan update are detailed in **Chapter 3.**

Chapter 3 Public Engagement

As shared in **Chapter 1**, the Ohio NEVI Plan development was led by ODOT's DriveOhio program staff in coordination with numerous partners and stakeholders. These NEVI Plan development and input partners include MPOs, RTPOs, utilities, and numerous public stakeholders representing the majority of the FHWA recommended stakeholder groups from the Feb. 10, 2022 federal guidance. This chapter reflects input ODOT received to date and anticipates continued engagement that will be captured in annual NEVI Plan updates.

NEVI Planning Public Engagement Objectives: The following objectives support ODOT's Public Engagement plan and approach:

- Identify and involve key FHWA-mandated stakeholder groups in the Plan's development.
- Engage stakeholders on preferred EVSE locations, charging preferences, costs, and future use of EVs.
- Engage stakeholders to ensure EV charging infrastructure achieves equitable and fair distribution.
- Ensure public education and participation opportunities are provided.
- Establish continuous public participation opportunities throughout the five-year NEVI deployments.

3.1 Stakeholders Involved in Plan Development

Public Engagement Stakeholders & Audiences: ODOT has and will continue to engage the following stakeholder groups and audiences to satisfy the NEVI Formula Program requirements.

- State Agency Coordination: Ohio Environmental Protection Agency (Ohio EPA), Ohio Department of Agriculture Weights & Measures, Public Utilities Commission of Ohio, and the Governor's Office of Workforce Transformation, etc. (Detailed in **Chapter 2** above).
- Planning Partner Engagement: Adjacent states, MPOs, RTPOs, Council of Governments.
- Technical Partner Engagement: Investor-owned Utilities, Cooperative Utilities, Municipal Utilities, industry representatives from EVSE companies.
- Stakeholder Organization Engagement: Identify and involve FHWA-mandated stakeholder groups in the Plan's development to include local governmental entities, labor organizations, representatives of the transportation and freight logistics industries, state public transportation agencies, and urban, rural, and disadvantaged communities.
- Equity Community Engagement: Underrepresented or disadvantaged communities, community-based organizations, air quality, rural, and equity-based stakeholder groups.
- General Public Engagement: General public engagement including registered motorists with emphasis on current and prospective EV owning motorists.

3.2 Public Outreach

The public involvement process has and will continue to incorporate strategies that allow for electronic communication, media relations, and other strategies to inform and involve stakeholders and interested parties. Most outreach opportunities will be conducted virtually to facilitate efficient engagement. Alternative engagement strategies will be used to comply with the Americans with

Disabilities Act of 1990 and measures to ensure input from traditionally underrepresented communities as defined in Title VI of the Civil Rights Act of 1964 (Title VI).

In general, each of the meetings, whether in small group or 1-1 format, were designed to cover the following core topics:

- Provide educational content of federal requirements and ODOT's Plan progress
- Solicit input from stakeholders on benefits, impacts, challenges, and concerns
- Understand opportunities for collaboration and leveraging other relevant initiatives
- Provide and receive technical content for planning and improving the procurement process

Informed by previous stakeholder engagement conducted as part of the plan development phase in 2022, and the goals of this plan, ODOT's annual plan update engagements include items such as more detailed outreach to potential Proposers on the areas that will be part of the competitive procurement and Title 23 requirements and processes that may not be familiar to the expected set of Proposers.

Direct Meetings with Neighboring States, Planning Partners, & Technical Partners: ODOT staff has and will continue to meet directly with neighboring state agency leadership counterparts on progress and plans and receive their input on border regions. Further, ODOT will coordinate with Ohio's regional transportation planning agencies, utilities, and other technical partners such as site hosts and EVSE companies to understand potential EVSE deployment challenges and assess existing best practices and solutions. An online stakeholder mapping tool has been created to disseminate spatial information about the NEVI plan.

Table 4 provides more details on the dates of each of these meetings as well as more specifics on key topics and questions pertaining to each individual stakeholder group.

Table 4: Planning & Technical Partner Engagements to Date

Type	Relevance for NEVI Planning	Meeting Topics and Discussion Questions	Meetings/Dates
State Agencies	Detailed in State Agency Coordination **Chapter 2**	Detailed in State Agency Coordination **Chapter 2**	- FHWA Division Office: 10/22; 1/23 - EPA: 11/22; 1/23 - PUCO: 12/22, 5/23 - ODA: 11/22 - Joint Office: 1/23
Neighboring States	Connect and sync state plans to ensure no gaps at state shared borders	How can ODOT coordinate with other states to ensure no gaps along the borders and ensure efficient use of NEVI funds? How can ODOT and other states benefit from the lessons learned in the yearly plan updates?	- MDOT: 4/22 - KYTC: 4/22 - INDOT: 4/22 - WVDOT: 4/22 - PennDOT: 5/22
MPOs/RTPOs	Regional transportation planning, equity planning, stakeholder engagement, management of regional US DOT "attributable funding"	How can ODOT align NEVI Plan with regional EVSE plans and priorities? What equity-based planning and engagement suggestions do MPOs/RTPOs have? How can they support general public outreach and engagement? What feedback do MPOs/RTPOs have on the yearly NEVI plan update?	- OARC: 4/22, 4/23 - AMATS: 5/22 - NOACA: 5/22 - TMACOG: 5/22 - MORPC: 5/22 - Eastgate: 5/22 - MVRPC: 5/22 - Buckeye Hills: 5/22 - OKI: 4/22; 6/22

Type	Relevance for NEVI Planning	Meeting Topics and Discussion Questions	Meetings/Dates
Utilities	Electric Power supply, local customer design, rate/tariffs, demand management, possible EVSE owner/operators	How best can utilities assist customers with assessing grid power availability / site upgrade costs needed for NEVI EVSE? Do utilities see major supply issues (transformer availability, etc.) that should be taken into account? Are they considering special Rate / Tariff design for EVSE? What are they evaluating regarding grid/load management for EVSE? What feedback do utilities have on their interactions with EVSE vendors during the procurement process?	- Duke: 4/22, 5/23 - AEP: 2/22, 5/23 - AES: 2/22, 5/23 - First Energy: 2/22, 5/23 - OEC: 2/22, 5/23 - NOPEC: 3/22 - SOPEC: 7/22 - AMP: 7/22, 5/23
EVSE Vendors & Site Hosts	EVSE hardware, Software, Networking vendors; Maintenance Services; EVSE Site hosts; EVSE Ownership and Operations, etc. *Procurement-related meetings with EVSE Vendors & Site Hosts are detailed in **Chapter 5***	How aware are these vendors of NEVI requirements generally? Do they expect to bid on state NEVI procurements? Can they abide by NEVI requirements? Do they foresee issues with participation? What are expected costs for deployment and O&M? What assumptions are they making in their break-even analysis? What challenges do they foresee?	- ChargePoint: 4/22 - Sheetz: 4/22 - Electrada: 4/22 - Eaton: 4/22 - Applegreen: 4/22 - Shell ReCharge: 5/22 - EVgo: 5/22 - Blink: 5/22 - Electrify America: 5/22 - 7-Eleven: 5/22
Labor Organizations	Ensure fair labor practices, safety, equity, prevailing wage, and workforce development / training opportunities	Are there enough certified electricians in the state for EVSE installation at NEVI scale? Ongoing Maintenance? Workforce development & training programs to help with electrician pipeline. Does the state need more or upgraded training centers or curriculum?	- EVITP: 5/22, 5/23 - PowerConnect: 5/22
Technical Training Centers and Universities	Workforce development, career and vocational training for EV related jobs in Ohio	Discussion of the programs and resources currently available and needed for EV workforce development programs in Ohio.	- Regional Workshop on Electrified Mobility: 12/21 - Northeast Ohio Regional Energy Storage Workforce and Innovation Road Mapping Workshops: 3/22 - National Center for Urban Solutions: June-July 2022 (ongoing discussions)

Source: DriveOhio

Stakeholder Organizations: ODOT staff has and will continue to engage with FHWA NEVI guidance specified stakeholder organizations (i.e., local governments, labor, transit agencies, industry, etc.) in relevant group meetings and individual meetings. **Table 5** provides more details on the dates of each of these meetings as well as more specifics on key topics and questions pertaining to each individual stakeholder group.

Table 5: Stakeholder, Equity, & General Public Engagement Activities to Date

Type	Relevance for NEVI Planning	Meeting Topics and Discussion Questions	Meetings/Dates
Local Governments	Stakeholders of MPOs, and contributors to decision-making processes promoting the integration of electric vehicle infrastructure within their communities	How can ODOT align the NEVI Plan with local government EVSE plans and priorities? Do local governments want to participate in equity-based planning and engagement? Do local governments / jurisdictions want to help streamline local zoning, code, permitting, EV Make Ready requirements? What feedback do they have on the yearly NEVI plan update?	Hosted webinars through Ohio's Local Technical Assistance Program (LTAP) for 100+ on 5/22 and 4/23 with a presentation and 30 minutes of Q&A.
Freight & Logistics	Need for EVSE as they electrify on key freight corridors	How fast do major freight companies plan to electrify? Do freight companies plan to use public EVSE? What key design requirements need to be considered for freight EVSE – ingress / egress? Power? Etc.? Are there key freight corridors to prioritize? Intermodal hubs?	Numerous meetings mid-2021 with truck stop owners / operators, national and Ohio-based fleets, OEMs, and workforce representatives
Transportation Agencies	Connect public transit systems to overall state electrification plan to ensure equity and access for citizens who rely on public transit	How can ODOT align NEVI Plan with transit Electrification plans? Park & rides? And mobility priorities? Do transit agencies want to participate in equity-based planning and engagement?	Late May through end of July, 2022
Statewide Electrification Committee	Membership comprised of 134 organizations	Key industry and organizational stakeholders with direct NEVI relevance and experience with EV and EVSE projects. Members include EV original equipment manufacturers (OEMs), EVSE OEMs, utilities, nonprofits, etc.	June, 2022
Power a Clean Future Ohio / Ohio Climate and Clean Energy Coalition	Coalition of Ohio Environmental Orgs (Sierra Club, Natural Resources Defense Council (NRDC), Ohio Environmental Defense Council (OEC), etc.) and Local Govts. that have carbon reduction plans	Environmental organizations are on the FHWA list of recommended public engagement audiences, and this would be an opportunity to address the main groups at once.	June, 2022

Source: DriveOhio

Program Webpage: ODOT has created, and will continue to update, a program-specific webpage https://drive.ohio.gov/electric and a public online mapping tool for site specific feedback. This webpage is designed to keep stakeholders and other interested parties informed and offer an opportunity to provide feedback and input. ODOT will continue populate this page with additional resources, reports, EV registration data, recorded presentations, and other informational materials as they become available. The draft NEVI Plan and mapping tool was released for public comment on the program website at the beginning of July 2022. Comments on the draft NEVI Plan from both the general public, and 15+ entities were received and incorporated into the final plan. Approximately 414 comments on site feasibility have been received and were used to help determine charging locations during the procurement process.

Listening Sessions: ODOT is partnering with several Ohio MPOs and RTPOs to host in-person listening sessions across the state. The MPOs and RTPOs are helping to inform local communities and assisting with meeting space.

Virtual Public Meetings: ODOT has partnered with Drive Electric Ohio chapters to engage various segments of the general public and interested stakeholder organizations as described in **Table 6**. Primarily accomplished through virtual public meetings and information sessions, ODOT's goal is to keep stakeholders and other interested parties informed and offer an opportunity to provide feedback and input. Fact sheet, presentation, and other materials from these engagements have and will continue to inform ODOT's NEVI Plan, as well as be made available on ODOT's NEVI website.

Table 6: General Public Information Sessions to Date

Type	Location / Relevance	Interests and Impacts	Meetings/Dates
Urban Community Resident **Listening Sessions**	1. Cleveland 2. Columbus 3. Cincinnati 4. Dayton	Working with the MPOs and Drive Electric Ohio chapters in these regions to invite local community-based organizations, and local residents to this series of Transportation Electrification listening sessions, which focus on the yearly NEVI updates.	1. 7/22, 6/23 2. 7/22, 6/23 3. 7/22, 6/23 4. 7/22, 6/23
Rural Community Resident **Listening Sessions**	1. Rural Ohio 2. Appalachia	Working with the MPOs and Drive Electric Ohio chapters to invite local community-based orgs, and local residents to this series of Transportation Electrification listening sessions which focus on the yearly NEVI updates. Given the unique needs of rural area, the discussion also includes ensuring locations, power availability, and quantity are designed to meet rural specific needs. How can sites be "right sized" for the amount of charging based on utility power availability? EV adoption? EVSE Demand? Etc.?	1. 7/22, 6/23 2. 7/22, 6/23
Drive Electric Ohio Regional EV Owner Chapters (6) **Virtual Public Meetings**	1. Northeast Ohio 2. Northwest Ohio 3. Columbus 4. Southeast Ohio 5. Dayton 6. Cincinnati	EV Owners / Enthusiasts –some of the most interested Ohio general public motorists have personal interests and opinions on NEVI and EVSE locations. The meetings focus on and seek input to updates to Ohio's NEVI plan.	1. 6/22, 6/23 2. 6/22, 6/23 3. 6/22, 6/23 4. 6/22, 6/23 5. 6/22, 6/23 6. 6/22, 6/23
Public Information Webinar	Public information session to provide general information on NEVI Plan	Inform the public on NEVI Formula program, ODOT NEVI Plan high level vision and goals, and record to post on state NEVI website.	TBD

Source: DriveOhio

In addition to the stakeholder meetings described above, ODOT has engaged with stakeholders and interested parties through other strategies as detailed in **Table 7.**

Table 7: Other Engagements to Date

Engagement Type	Location / Relevance	Interests and Impacts	Meetings/Dates
Conferences and Presentations	Ohio NEVI Plan updates, EV charging infrastructure and workforce development, supply chain management, state of EV in Ohio, equity and diversity	Increasing awareness among industry professionals, fostering collaborations and partnerships.	- Toledo Chamber of Commerce: 7/22 - NOPEC: 8/22 - OTEC: 10/22 - I-70/I-75 Development Association: 10/22 - Ohio Energy Conference: 10/22 - Equity Now Coalition: 10/22 - Columbus State Community College: 11/22 - Leadership Ohio: 11/22 - Conway Conference: 3/23 - ITS America Annual Conference: 4/23
Media Interviews	Ohio NEVI Plan updates	Informing a wide audience, reaching a diverse demographic, generating media coverage.	- Fox 19: 9/22 - WXVU Cincinnati Edition: 9/22- WDLR and 92.9: 1/23
Events	The Ohio State University	Engaging the local community, fostering dialogue, encouraging student and public participation.	OSU Rapid Innovation Competition: 12/2022
Surveys	1. EV charging needs in rural communities 2. Insights from minority communities on the future of mobility	Obtaining valuable insights, ensuring inclusivity, involving disadvantaged communities.	1. Rural Community Needs Survey: Spring 2022 2. African American Male Wellness Walk: 8/22, 8/23

Source: DriveOhio

The Ohio NEVI Public Engagement Plan and activities presented above reflect input ODOT received to date from various stakeholders. ODOT intends to continue engagement with these partners throughout the annual Plan update processes.

Potential Future Engagement Topics

Future engagement with state agencies and stakeholder organizations may be sought by ODOT on the following topics:

- AFC station siting preferences within NEVI compliant parameters
- Future AFC designations
- ODOT's ongoing, draft NEVI EVSE procurement documents
- Non-AFC, regional, or local EVSE charging needs and priorities
- Equity-based charging needs and solutions
- Freight and logistics EVSE charging needs

Chapter 4 Plan Vision and Goals

Ohio NEVI Plan Vision: ODOT's vision for the NEVI Plan is to develop a comprehensive framework to enable EV travel across the State and spur economic development. The network will give drivers confidence and flexibility when driving Ohio's roads for personal, professional, or recreational purposes, regardless of distance traveled, location, or weather conditions.

Ohio NEVI Plan Goals: ODOT's goals for the NEVI Plan, in accordance with FHWA guidance, will focus on building out FHWA Designated AFCs, then seek to expand to regional and local routes of significance, equity-based destination charging, and freight charging locations. ODOT's key NEVI Plan goals are summarized below:

Goal #1: Comprehensive EVSE Planning: Create an EVSE charging plan to guide a convenient, reliable, affordable, and equitable charging experience for Ohio motorists.

- ***Objective 1.1: Strategic Statewide Planning:*** Create a balanced plan with detail and flexibility as the market evolves.
- ***Objective 1.2: Equitable EVSE Locations:*** Ensure fair, equitable, and accessible distribution of EVSE in Ohio.
- ***Objective 1.3: Statewide EVSE Network:*** Enable convenient, effective, and fast charging for EV motorists traveling within Ohio.

Goal #2: Program Implementation & Administration: Utilize NEVI funds to accelerate the Ohio market through third party partnerships to own and operate EVSE.

- ***Objective 2.1: Third Party Partnerships:*** Catalyze the Ohio market through third party (non-state) partnerships of EVSE site hosts, owners, and operators.
- ***Objective 2.2: Proposer Inclusive Design:*** Encourage all eligible entities for maximum NEVI bid participation.
- ***Objective 2.3: Efficient, Effective Deployments:*** Ensure efficiency, effectiveness, and fiscal responsibility of NEVI Funds administration.

Goal #3: Data Tracking & Evaluation: Ensure Ohio tracks relevant data on NEVI funded EVSE charging stations and related performance metrics to ensure that the network meets FHWA standards of access, reliability, and convenience.

- ***Objective 3.1: EVSE Data Tracking:*** Track data on NEVI funded EVSE detailing uptime, unique sessions of EV users, and energy usage data.
- ***Objective 3.2: Maximize EVSE Compliance:*** Maximize EVSE uptime, reliability, security, and NEVI compliance through contracts, reporting requirements, and program management.
- ***Objective 3.3: Evaluation & Refinement:*** Perform evaluations and refine additional NEVI EVSE investments.

Program Results & Outcomes:

- ***Quantifiable Target: Enable Distance and Intercity Travel:*** 90% of Ohio residents live within 25 miles of NEVI compliant chargers.

As described previously, ODOT's overall timeline for the NEVI Plan will initially focus on building out FHWA Designated AFCs. After the Joint Office has certified Ohio's AFCs as "fully built out" to NEVI compliant standards, ODOT will expand NEVI Formula funded EVSE deployments. Ohio's NEVI Formula Funding is therefore expected to disburse in the phases as shown in **Figure 2**. Depending on how ODOT plans for future NEVI funds to be allocated, Phase III may be subdivided.

Chapter 5 Contracting

Proposals and bids for the first AFC procurement for thirty locations along Ohio's interstate corridors were received and are being reviewed. Awards are expected in Summer of 2023. As this plan covers a five-year program with several anticipated procurement rounds, this chapter discusses ODOT's overall procurement approach and then highlights specific information and lessons learned from the Phase 1 procurement.

The analysis in **Table 8** elaborates on the existing federal laws that will continue to impact projects under the BIL NEVI programs. In general, as with other US DOT projects, Title 23 requirements will apply to these projects and funds.

Table 8: NEVI Contracting: Key Federal Laws

Pertinent Federal Law	Relevance to ODOT and NEVI Formula funds
MPO, TIP, and STIP Regulations	Typically, a transportation project funded with federal DOT dollars in a metropolitan area covered by an MPO will be placed on a Transportation Improvement Program (TIP) or State Transportation Improvement Program (STIP) developed in cooperation with the MPOs. Federal NEVI guidance indicates that there is an expectation of consultation with MPOs (and other entities) as the NEVI Plan is developed and as funds are sought. The MPO, TIP, and STIP regulations require communication and coordination. Part of their charge is to address air quality and part of the NEVI directive is to address this environmental concern as well as climate change and resilience. It would thus be important to not only include the respective MPOs in the NEVI Plan development, but also determine if they intend to sponsor projects themselves or if their respective members seek to obtain NEVI dollars and grants as they are eligible under the law as an "eligible entity" for NEVI Community Grants. **(23 U.S.C. 134 and 135, 49 U.S.C. 5303 and 5304)**
Clean Air Act	A major impetus for the NEVI program is an attempt to address greenhouse gases and climate change. The below sections of federal law require compliance with plans to reduce greenhouse gas emissions for projects funded with federal aid dollars. Coordination with MPOs will help address legal and permitting issues under these statutes. (**In non-attainment and maintenance areas, sections 174 and 176 (c) and (d) of the 1990 Clean Air Act, as amended (42 U.S.C. 7504, 7506 (c) and (d)), and 40 CFR part 93)**
NEPA	NEVI projects should anticipate some level of NEPA coordination. ODOT has been delegated authority by the Federal Highway Administration to approve most levels of NEPA documentation. Permitting agencies like EPA and the Army Corps of Engineers will need to be engaged in coordination should any project impact resources under their jurisdiction. **(40 CFR Parts 1500-1508)**
Uniform Relocation Assistance and Real Property Acquisition Policies Act	The intent of this code section is to have those whose properties are impacted by a federal-aid project receive consistent treatment and be compensated equitably for any loss of their property interests. This code would be applicable if a property interest is being acquired by ODOT or via an ODOT proxy like a local government receiving these NEVI project dollars. If private partners offer to lease their land as part of a charging station public-private partnership (P3) package, the "Uniform Act" should not apply. However, if additional right of way was needed to run electric or communication lines for a project, then the Act would apply, and the NEVI project would be subject to these acquisition rules. Ohio government entities would also have to follow Ohio Revised Code Chapter 163 for such takings. **(42 U.S.C. 4601)**
Federal Acquisition Regulations	The FAR mandates that extensive federal rules be followed when spending federal dollars. 48 CFR Chapter 12 applies specifically to the Department of Transportation. The FAR seeks to mandate levels of competition, transparency, accountability, and use of federal terms and conditions for these contracts. It will likely apply to NEVI program contracts. Should ODOT follow its normal competitive bidding practices there should be no conflicts with FAR compliance. ODOT has experts in their accounting divisions that know the FAR regulation intimately. **48 CFR Parts 1 through 53**

Pertinent Federal Law	Relevance to ODOT and NEVI Formula funds
Tile 23, Chapter 1 of the Code of Federal Regulations	This chapter of federal law is the overall federal-aid highway section. It brings together the requirements to comply with many of the aforementioned laws and dictates requirements like prevailing wage, maintenance, relocation requirements, parkland preservation, hazard elimination, scenic byways, etc.
Build America and Buy America	Final guidance from the FHWA (Waiver of Buy America Requirements for Electric Vehicle Chargers) indicates that a waiver of Buy America requirements to EV chargers and components of EV chargers structured to phase out over time will be applied. EV chargers manufactured prior to March 23, 2023 of the EV charger waiver are covered under the existing Manufactured Products General Waiver. The waiver will be applied in phases, with the first phase applying to EV chargers and components of EV chargers if final assembly occurs in the United States for all chargers that are manufactured from the effective date of the waiver (March 23, 2023) until June 30th, 2024, and where recipients begin installation by October 1st, 2024. Additionally, all predominantly steel and iron housing components are excluded from the waiver and must meet FHWA's Buy America requirements for steel and iron. See the Federal Register for more information: https://www.federalregister.gov/documents/2023/02/21/2023-03498/waiver-of-buy-america-requirements-for-electric-vehicle-chargers

Source: DriveOhio

The analysis in **Table 9** elaborates on the existing Ohio laws that could impact projects under the BIL NEVI programs including an update to show which laws were used in the first phase of procurement. The Ohio Revised Code (R.C.) Sections under Chapter 55 that could apply to ODOT's procurement activities for NEVI project implementation are R.C. §§ 5501.311 and .312 (leasing), 5501.70 et seq. (P3), 5513 et seq. (purchasing – low bid, direct selection, or multiple award), 5517.011 (design-build), 5525 et seq. (low-bid construction), and 5526 et seq. (consulting services).

Table 9: NEVI Contracting: Key Ohio Laws

Pertaining Ohio Law	Relevance to ODOT and NEVI Formula funds	Used in Phase 1 Procurement
Private Funding or In-Kind Contributions	For projects that will involve a P3 scenario that will have a private company contribute dollars or land to install, operate and maintain a NEVI system, ODOT could use its authority under R.C. §§ 5501.311 and .312 (leasing) or 5501.70 et seq. (P3). ODOT can accept (under R.C. 5501.31 and 5501.70) private contributions to a portion of the cost of a facility as well as land or other personal property (R.C. 5501.77 and R.C. 5501.33). Concurrence from the FHWA should be obtained prior to accepting an in-kind contribution if working on federal-aid highways.	Yes, for P3 contracting under 5501.70 et seq.
Materials and Goods	To buy materials or goods or NEVI equipment or traffic signs, ODOT can use its purchasing authority under R.C. 5513 et seq. R.C. Chapter 5513 permits ODOT to buy material through a low bid process, through a direct selection with appropriate criteria, and through a multiple award process where every Proposer who provides a responsive bid is placed "on contract," and then ODOT can select which product it wants to choose based on the circumstances.	No

Pertaining Ohio Law	Relevance to ODOT and NEVI Formula funds	Used in Phase 1 Procurement
Services	R.C. Section 5526 et seq. allows ODOT to procure professional services for any "professional service that is determined by the director of transportation or any other designated officials of the department to be necessary for the provision of transportation services or to provide assistance to the department in furtherance of its statutory duties and powers." This law is broad and professional services contemplated under it could facilitate planning, design, and acquisition of NEVI facilities. Section 5526.01(C)(8) allows for "[a]ny other professional service that is determined by the director of transportation or any other designated officials of the department to be necessary for the provision of transportation services or to provide assistance to the department in furtherance of its statutory duties and powers."	No
Construction	Construction-only projects can be procured through R.C. §§ 5501.312(A)(5) (construction + leasing), 5501.70 et seq. (P3), 5517.011 (design-build), and 5525 et seq. (low-bid construction). ODOT could build any transportation facility, but projects with a private funding contribution component may be limited to procurement under R.C. R.C. §§ 5501.312(A)(5) (construction + leasing) or 5501.70 et seq. (P3).	Yes, for P3 contracting under 5501.70 et seq.
DAS OIT: R.C. 125.18	As the entity responsible for statewide information technology consistency, the Ohio Department of Administrative Services Office of Information Technology (DASOIT) is responsible for IT related procurement per Ohio R.C. 125.18. As ODOT takes steps toward a NEVI program that may require data acquisition and usage ODOT will engage DAS to make sure they are comfortable with the systems ODOT intends to interface with.	Yes

Source: DriveOhio

Contracting and Procurement Process Objectives: In light of all the federal and state legal provisions above, ODOT assembled the following list detailing the various categories of consideration for NEVI procurement and contract design.

As detailed in **Chapter 4** above, goals #2 and #3 that ODOT established for the NEVI program speak directly to the agency vision for and expected outcomes of the NEVI Formula funding procurement and contracting process. These goals are shown in **Table 10**.

Table 10: NEVI Contracting: Key Ohio NEVI Procurement Objectives

Goal	Relevance to ODOT and NEVI Formula funds
Non-state land, in locations that are publicly accessible	ODOT does not intend to fund EVSE to be sited on state owned land, rather ODOT will seek to deploy NEVI Formula funds to build out EVSE on third party property. ODOT intends to be inclusive in its program design to allow for both privately owned, leased, and publicly owned lands (such as municipal, county, or other local jurisdiction-controlled property) that meets federal NEVI program requirements, and all state Plan goals.
Define Eligible and Priority Locations	As detailed in Chapter 7.2, ODOT has defined the gaps in Ohio's AFC system which need to be filled for the state to be certified "fully built out" under the NEVI program. ODOT has further worked to prioritize interchanges best suited to maximize NEVI compliance as well as achieve state goals. ODOT has defined 1-mile driving distance polygons for these interchanges to provide prospective NEVI funding applicants clear understanding of eligible location "zones." Following the latest version (2009) of the Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways under Chapter 2J for Specific Service Signs, the 1-mile travel distance is measured from the terminus of the exit off-ramp.
Third Party (non-state) Owner / Operators	As described previously in ***Objective 2.1 (Non-state land, in locations that are publicly accessible) of this table***, one of ODOT's key goals is to catalyze the Ohio market through third party (non-state) partnerships of EVSE site hosts, owners, and operators. ODOT does not intend for the state DOT to own and operate charging stations; rather, the agency will seek third party owner / operators.

Goal	Relevance to ODOT and NEVI Formula funds
Vendor / Business Model Inclusive Program Design	ODOT intends to structure its procurement process, to the greatest extent possible, to be vendor and business model inclusive, allowing for EVSE at existing fueling stations, restaurants, retail locations, and other sites that meet NEVI's requirements and have amenities. In addition, ODOT intends to allow for participation of the various EVSE company business models in the market.
Competitive Procurement Program	ODOT intends to create a competitive procurement program, both with minimum eligibility requirements as well as ranked scoring criteria to determine the final NEVI funded locations in Ohio.
ODOT Responsible for NEPA	ODOT intends to facilitate the NEPA and other environmental reviews for successful applicants to ease the cost and administrative burden and maximize the consistency and quality of NEPA work.
Contracts Binding Awarded Parties	ODOT intends to "flow down" a series federal and state requirements to all third parties awarded funds through NEVI. These contractual terms and conditions will define the obligations NEVI funded EVSE owner / operators must meet on all relevant issues, including but not limited to accessibility, uptime, cybersecurity, safety, reliability, data gathering, reporting, and labor compliance.
Data Gathering & Reporting	As described above, ODOT intends to contractually require data gathering and reporting from NEVI awarded EVSE owner / operators for the agency to ensure compliance and provide transparency.

Source: DriveOhio

Contracting and Procurement Process Steps**:** The following steps will be followed for ODOT's ongoing competitive procurements of EVSE.

1. **Advertise RFP:** ODOT advertises the procurement opportunity throughout the state. EV charging companies or property owners who will self-manage or partner with other companies, and companies that lease properties who will self-manage or partner with other companies (with the property owner's support) will be part of the initial phases of opportunities to apply for NEVI funding to install, own, and operate compliant EV chargers.
2. **Prepare Bid:** Proposers will identify specific sites for EV charger installation within the general eligible locations provided by ODOT and will need to coordinate with the utility company on power availability and site readiness prior to submitting a proposal, including a price proposal.
    a. Price proposals should identify the proposed subsidy amount and assume forecasted risk and resulting revenue from five years of operation and maintenance as required by the NEVI Proposed rules.
    b. Proposers should provide a minimum 20% match. This could include funding from other non-NEVI sources, such as utility programs, if those are available.
    c. Proposers will be responsible for coordination of all permits and verification of site compliance with other regulations such as the ADA.
3. **Evaluate Bid:** ODOT evaluates bids based on low bid, qualifications, or best-value – a combination of price and qualifications – and makes contract awards contingent on environmental and real estate clearance. The type (low bid, qualifications-based, or best-value) of evaluation will be determined and communicated to participants in the request for proposals (RFP) The phase 1 procurement used the best-value evaluation.
4. **Complete Title 23 Requirements:** ODOT has NEPA assignment and will perform the environmental review of the property (or portion of the property) offered in the proposals to

comply with NEPA.[1] After environmental clearance, the Proposer will execute a federally-compliant agreement with the property owner providing ODOT with a property interest sufficient to perform its obligations under the NEVI Program. If the property owner is the Proposer, they would convey the property interest to ODOT upon award for the duration of the project. If the Proposer was not the property owner, the Proposer would be expected to have secured a legal interest to the property, compliant with federal regulations, which could be transferred or assigned to ODOT if the Proposer is awarded the project.

5. **Execute Contract:** As the NEPA and property interest agreements are completed, the final terms of the contract will be negotiated, if applicable, and the contract will be executed upon agreement of the contracting parties.
6. **Deploy EV Chargers:** The contracted party will perform site work, install equipment, connect to power service, test, and commission the EVSEs. ODOT will review the deployment activities for compliance with Title 23 and other contractual terms.
7. **Operate and Maintain EV Chargers:** The contract will include operations and maintenance service for up to five years. The contracted party will provide specified data that ODOT will share for program monitoring and compliance. Depending upon the contract structure, ODOT will make periodic payments to the selected companies for up to five years after contract award.

5.1 Phase 1 Procurement

Two goals drove ODOT's decisions as they developed their procurement process and documents:

First to Market: The "first to market" approach was driven by the desire to minimize the impacts of the supply chain disruptions that exist for electrical transformers and electric vehicle supply equipment (EVSE), as well as by the workforce shortages for electricians driven by solar, data center, and EV industry expansion.

Market Driven Charging Locations: The second goal was to let the market decide where corridor charging is most appropriate. Unlike several states that have restricted the interchanges available for bidding to optimize for 50-miles spacing, ODOT allowed bids within 1 mile of any interchange with 3-phase power outside of a NEVI-compliant geography (assumed to be 25 miles in either direction along an existing interstate AFC from a compliant charger).

Together these goals were aimed at generating the following outcomes 1) maximum market participation and thereby a strong bidding environment and 2) minimum length of time before ownership, operations and maintenance is completely turned over to the private sector.

RFI and One-on-One Meetings: ODOT started the Phase I procurement process by issuing an RFI on September 7, 2022, seeking feedback from EVSE vendors on their proposed Request for Proposal (RFP). To ensure that the procurement process was inclusive and responsive to industry input, ODOT held a series of meetings with 33 interested parties from September 19th to September 30th, 2022. During these meetings, ODOT received valuable feedback on the proposed procurement documents. The most common concerns expressed by EVSE vendors were related to supply chain

[1] https://www.transportation.ohio.gov/programs/nepa-odot/nepa-assignment-documentation

delays, utility coordination, Buy America requirements, the scoring approach, Title 23 and NEPA requirements.

Table 11: Phase I Procurement Meetings

Types of Companies	One-on-One Topics	One-on-One Participants
EVSE Hardware, Software, Networking Vendors; Maintenance Services; EVSE Site Hosts; EVSE Ownership and Operations, etc.	Bidders set the agenda for the meetings. Discussions generally focused on questions on the RFI (draft RFP), such as what challenges they expected or recommendations they had, how many sites they expected to bid on, the ability to comply with Buy America, etc.	Foxconn, Carbon Solutions Group, Applegreen, Hightower EV Solutions, Giant Eagle, Wallbox, Tesla, Sheetz, EV Range, Ananta Energy, DC-America, Norwalk Economic Development, Electrify America, EdgeEnergy, Kings Ford, EVgo, Autel Energy, Carrier, First Energy, Proudfoot Associates, Diogenes Capital, Switch Energy, SAF, ChargePoint, Heartland Charging Services, Shell, Trillium Energy, Black & Veatch, Rev Charger Systems, Blink Charging, M&K Imports

Source: DriveOhio

Proposers: As expected, Proposers were primarily EVSE vendors and fueling stations, whether gas stations, truck stops, or grocery store locations. Bids were also received from a general contractor and a hotel developer. With 30 possible sites, Ohio received responses from 30 firms with a total of 300 sites proposed. Of those 300 proposed sites, 120 sites were deemed responsive. **Figure 4** summarizes the total number of responsive Proposers and the number of viable candidate sites they submitted by Proposer type. Of the 30 site opportunities, 27 sites received responsive bids.

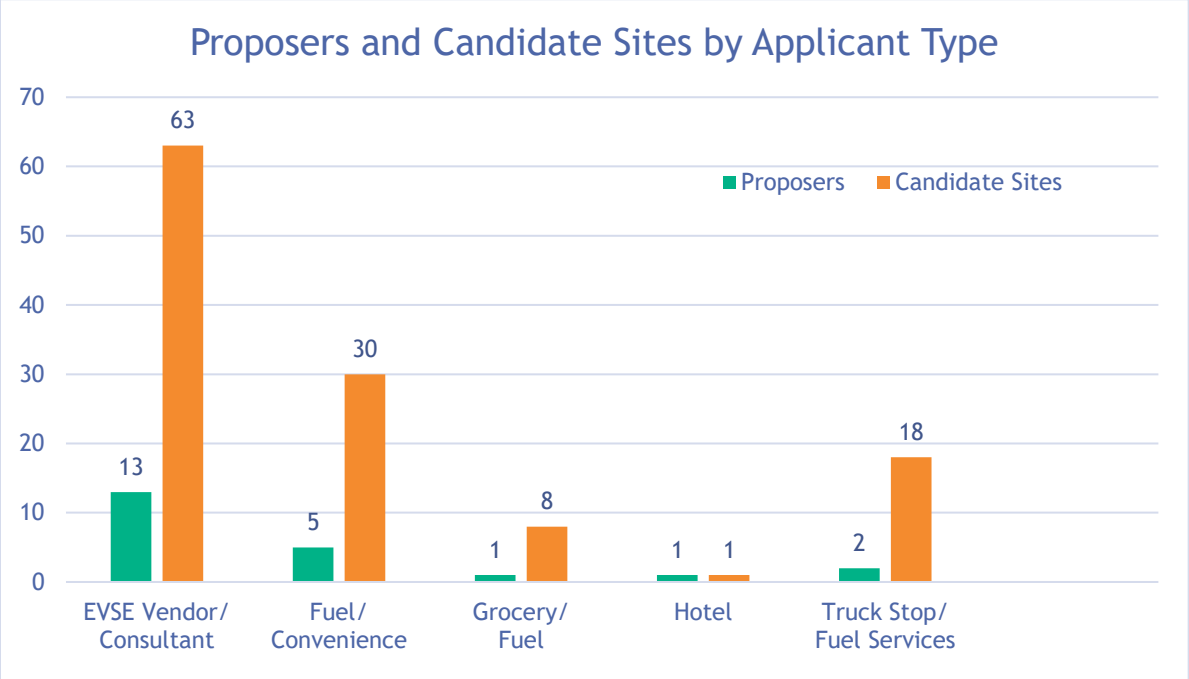

Figure 4: Proposers and Candidate Sites by Applicant Type
Source: ODOT

5.2 Lessons Learned

Thus far, the Phase 1 procurement has yielded the following lessons learned.

- **Be Ready – There is a lot of interest in this program:** In an effort to build out the interstate AFCs quickly, Ohio issued 30 possible sites in the first procurement phase. Ohio was excited to receive over 300 total responses, but that excitement was slightly diminished when the team realized the review burden. Future procurements and response evaluations will better consider what level of personnel and time will be needed to process the responses.
- **Speak the same language**: As many of the Proposers have not contracted with DOTs on Title 23 projects, Proposers asked questions, asked for clarification on wording or submitted information which highlighted some interpretation issues. This led to some inconsistencies in the Proposal submissions. Better understanding how the Proposers interpreted the language will allow future procurements to be drafted in a way that will be clearly understood by the Proposers.
- **Provide further explanation of proposal expectations**: Along the same line as the last lesson learned, there were some RFP requirements that seemed to be interpreted differently by some Proposers resulting in some interesting information, but the information was not aligned with the original RFP intent. The project team will consider using a video or recorded webinar to provide a walk-through of what ODOT expects and the type of information expected in the response.
- **Clarification of eligible and ineligible costs**: Given the program was still going through final rule creation as procurement was underway, questions continued to be answered around eligible and ineligible costs which caused some confusion with Proposers. The Final Rules and development of Ohio's NEVI P3 Agreement will help future procurements. Specific definitions and explanation on what is eligible now exist and while changes and unique situations may come up, program participants will be able to better respond due to this first year of experience.
- **Use online forms for submittal and easier summary of information**: Despite the use of response forms for portions of the proposals, the evaluation team saw a lack of consistency in how Proposers responded to the content requests. Additionally, some Proposers generally ignored the structure of the forms and provided information where they wanted to provide it. Multiple Proposers submitted documents that did not align with the RFP requirements. In the future, the project team will consider the use of forms, if internal systems allow, with more specific instructions or online forms which could better control how the Proposers respond and make summaries of the responses easier.
- **Align forms with evaluation criteria (order and content)**: During evaluation, the sequencing of the Proposer's response forms and the evaluation forms did not always match. This would not be a problem if only 3 to 5 proposals were received, but when the team was tasked with reviewing 300 responses, it was identified as an area for improvement. For future procurements, refinements will be made to better align the sequence of the proposal content and the evaluation forms.

- **Work more thoroughly with the utility companies on process and expectations.** Several Proposers were not able to provide utility costs in the response forms. Despite documenting early communication with the utility company, different levels of information on utility costs was made available to some Proposers. The project team will engage with the utility companies more thoroughly prior to the next round of procurement to better align on process and expectations with a goal of improved structuring of the process for everyone.
- **Include draft contract in RFP**: The RFP included draft agreement terms and conditions to share what the final contract would include. This was not a full, draft contract and did not allow for feedback on the full contract that Proposers would be expected to sign after contingent award. Negotiation will occur during the contingent award period which could possibly delay the Notice to Proceed.

Chapter 6 Existing and Future Conditions Analysis

This section provides an overview of Ohio's geography, terrain, and climate including current and future temperature, precipitation, and land use patterns, as well as provides details on Ohio's EV and EVSE related industry and market conditions such as EV ownership, EV availability, electric grid capacity, and electric utilities that service the state.

6.1 State Geography, Terrain, Climate and Land Use Patterns

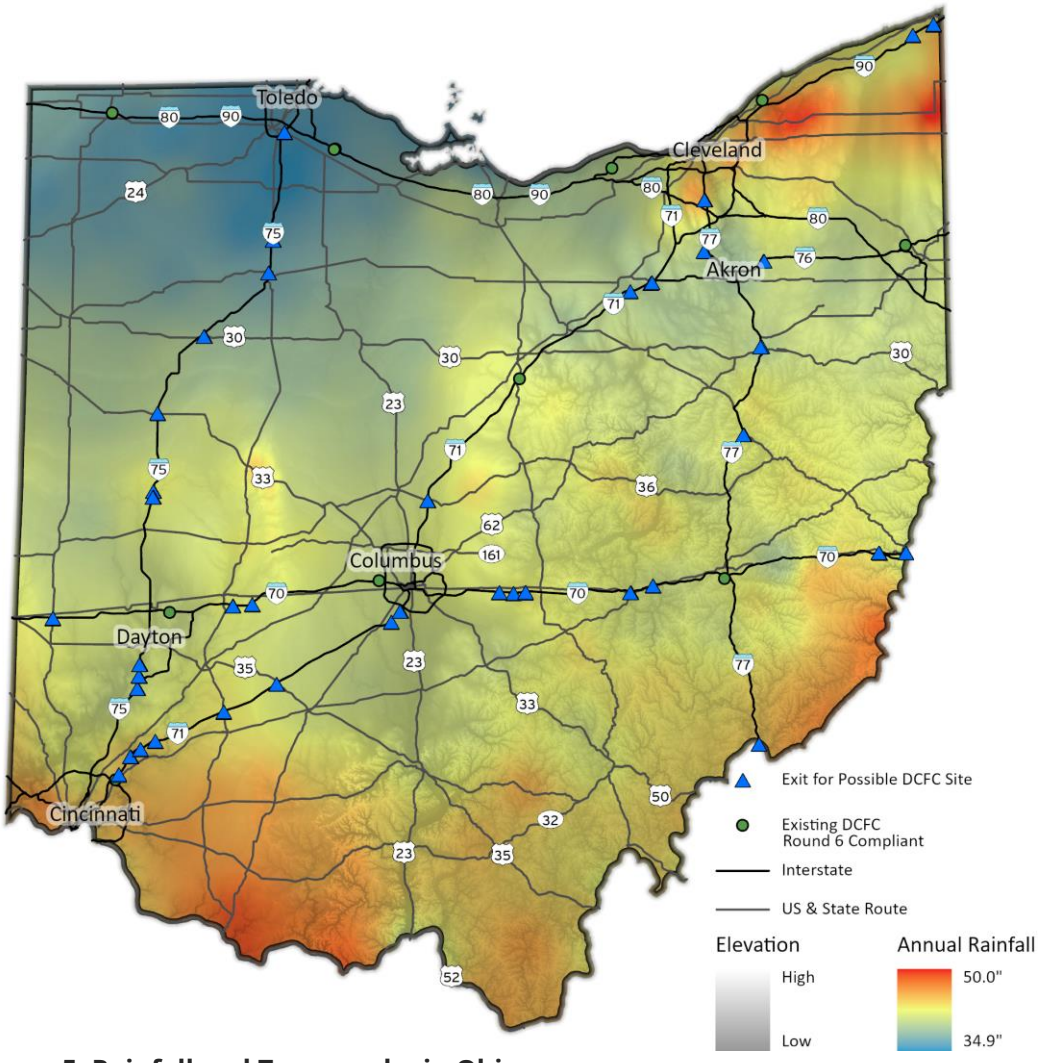

Figure 5: Rainfall and Topography in Ohio
Source: https://apps.ohiodnr.gov/gims/; PRISM Climate Group, Oregon State University, https://prism.oregonstate.edu, data created November 2021, accessed 20 May 2022.

Ohio is a relatively flat state with moderate amounts of rainfall throughout. The south and east portions of the state, coinciding with the northwestern portion of Appalachia, have low, rolling hills and many rivers, while the rest of the state is plains. The state is nearly half cultivated crops and pastureland, and 28.52% deciduous forest. Winter lows are typically around 19°F while summer

highs are around 86°F.[2] Ohio has six major metro areas and the 4th largest interstate highway system in the country. The state is bordered along the northern edge by Lake Erie and to the south by the Ohio River.

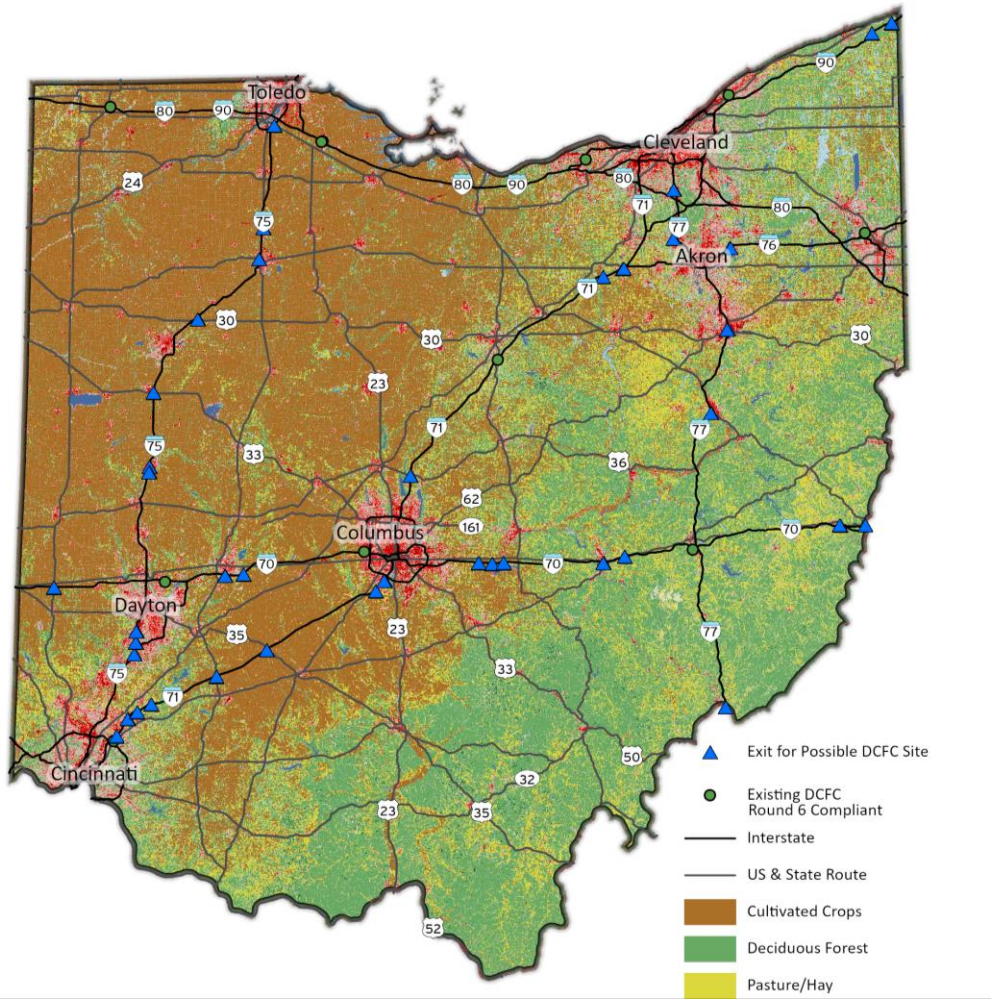

Figure 6: Land Cover in Ohio

Source: Dewitz, J., and U.S. Geological Survey, 2021, National Land Cover Database (NLCD) 2019 Products (ver. 2.0, June 2021): U.S. Geological Survey data release, https://doi.org/10.5066/P9KZCM54

Table 12: Land Cover Classification in Ohio

Land Cover Classification	Percentage of Ohio Land
Cultivated Crops	36.46%
Deciduous Forest	28.52%
Hay / Pasture	12.79%
Developed, Open Space	6.18%
Developed, Low Intensity	5.08%
All Others	10.97%

Source: Ibid.

[2] PRISM Climate Group, Oregon State University, https://prism.oregonstate.edu, data created November 2021, accessed 20 May 2022.

ODOT has reviewed all relevant data on weather, climate, precipitation, and land use patterns in Ohio and taken this data into account in the planning for EVSE stations that will be deployed throughout the state as part of the NEVI program. Specifically, the flat terrain is not expected to be a problem for EV range in the same way it would for a more mountainous state. In addition, the NEPA clearance activities performed by ODOT will resolve potential conflicts with flood zones, extreme weather, and snow removal. ODOT will continue to monitor these data for any changes of significance that will impact major travel and driving patterns throughout the state or change the methods or locations where NEVI funded EVSE charging stations should be deployed.

6.2 State Travel Patterns, Public Transportation Needs, Freight and Other Supply Chain Needs

With the mission to provide safe and easy movement of people and goods, ODOT supports the state highway system and promotes transportation initiatives statewide. **Figure 7** depicts the variation in Annual Average Daily Traffic (AADT) volumes by roadway across Ohio. Ohio's AFCs all have an AADT or 10,000 or more.

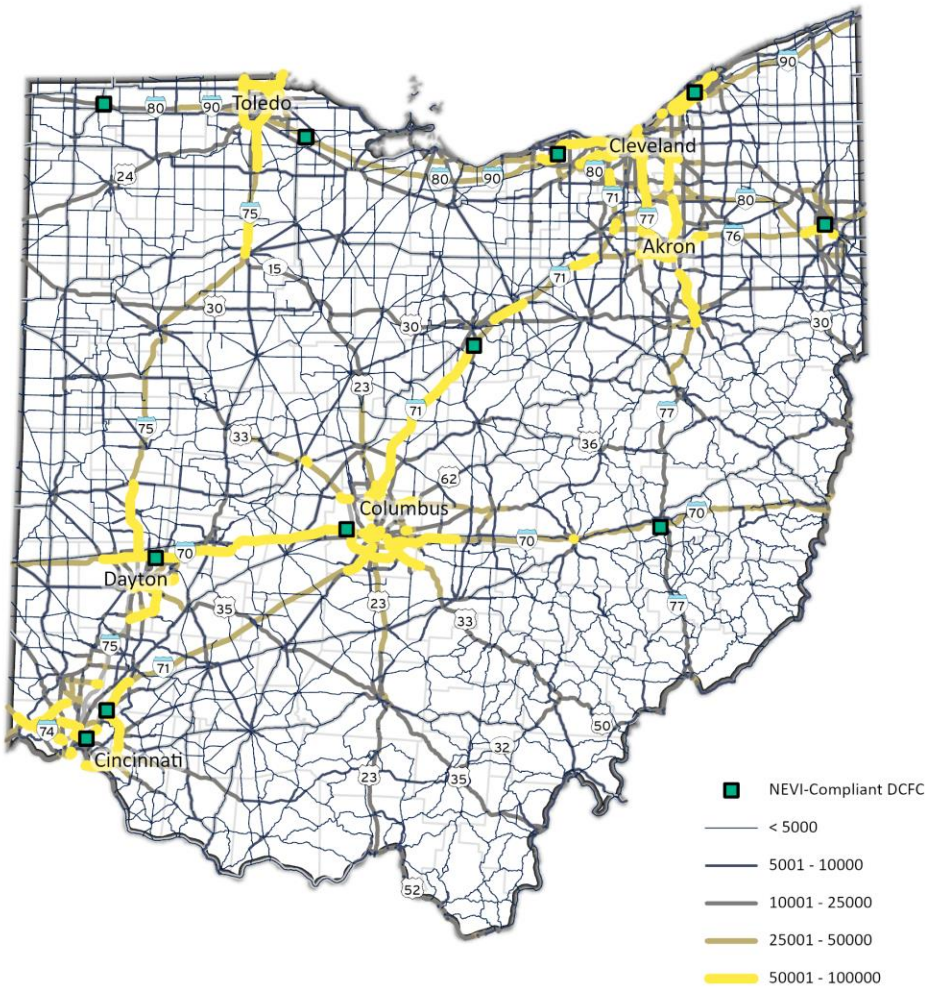

Figure 7: Ohio's Annual Average Daily Traffic Volumes
Source: ODOT

As a more than $3 billion per year enterprise, ODOT invests the bulk of its resources in system preservation through maintenance, construction, and snow and ice operations. ODOT's regional district offices and Central Office divisions work together to fulfill the department's mission of providing safe and easy movement of people and goods from place to place.

ODOT EV Planning Leadership: ODOT has been working on EV and EVSE planning for the past several years, and Ohio's NEVI Plan builds on two recent in-depth ODOT studies on EV corridor charging and freight electrification: the 2020 Electric Vehicle Charging Study and the 2021 Freight Electrification Study.

2020 Electric Vehicle Charging Study: ODOT released this study to assess needs for EV charging, primarily along Ohio's highway corridors. Corridor charging requires relatively high-power DCFC stations that can rapidly deliver significant added range to EVs at locations that are easily and quickly accessed by motorists. The report identifies DCFC gaps in Interstate, U.S. Highway and State Route corridors and identifies options to fill them. Most of the recommended DCFC locations relied on private commercial site hosts. The analysis differed from NEVI in that the number (1) and power level (50 kW) assumed to fill each gap were lower. There were also recommendations for Level 2 chargers at major attractions, state parks and some state facilities. Some of the Level 2 sites were filled, in cooperation with the Ohio EPA and ODNR using VW funds.

Figure 8: DriveOhio Electrification Reports
Source: DriveOhio

2021 Freight Electrification Study: DriveOhio released a study outlining the path forward for commercial electrification in August of 2021. The study details existing practices and the future framework needed to facilitate the freight and logistics industries transition to EVs. To evaluate the current state of play, freight vehicles were grouped into categories – terminal and off-road; last-mile delivery; local freight and drayage; and regional and long-haul – and feedback was collected from industry early adopters. Four of the ten sites identified in this study align with Phase 1 sites that are in procurement: I70-A, I71-A, I75-D, and I77-A/B. Main industry concerns so far have centered on charge times and pull-through parking availibility.

ODOT's NEVI Plan builds on the best practices, data, and public engagement work initiated in these two previous leading studies, ensuring that Ohio's NEVI Plan best aligns with Ohio's long-term needs. ODOT is collaborating with its internal divisions and external stakeholders throughout the NEVI planning and implementation process to ensure the highest quality data resources are brought to bear and coordinated throughout the performance period of the NEVI funds. To this end, ODOT is utilizing the expert staff and data available from several offices as noted in **Table 2: Internal Roles at ODOT**.

6.3 Ohio EV and EVSE Market Conditions

As described above, ODOT has provided leading studies on Ohio's passenger vehicle market and freight electrification potential. For each of these reports, ODOT assessed Ohio market conditions with regard to current and future EV model availability, EV adoption trends, and interviewed numerous key players in state and national EV and EVSE industries for benchmarking purposes. In addition, JobsOhio, with support from the National Resources Defense Council, Inc. (NRDC), commissioned a statewide study to understand Ohio's key advantages to attract new investment in the battery supply chain ecosystem to support Ohio's continued economic growth in the automotive supply chain sectors (see **Figure 9**: Electrification Benchmarking Report).

Figure 9: Electrification Benchmarking Report
Source: JobsOhio

Ohio's vast history in the automotive industry and automotive supply chain, as well as its overall proximity to resources, manufacturers, and end markets, are two key factors making the state an ideal location for lithium battery and EV manufacturers. The state's commitment to innovation makes it a natural fit for the emerging EV supply chain and manufacturing opportunities. Ohio's commitment to clean manufacturing, with renewable energy and solar energy, also makes it a prime choice for lithium-ion battery and EV manufacturing.

Ohio is a premier link in the automotive supply chain. Greater than 90% of the state's exports go to the internal combustion engine (ICE) supply chain. This presents a significant risk to Ohio's economic future as OEMs shift away from the ICE supply chain and invest in an EV future. As such, Ohio has a unique opportunity to lead in building a supply chain that capitalizes on the fast growth in EVs.

Building upon the state's success in attracting the GM-LG Chem Lordstown battery plant investment, the JobsOhio report's recommended next step for Ohio is to attract an investment in cathode active materials (CAM), one of the main components of a lithium-ion battery. This investment would provide the largest jobs and taxable revenue opportunity for the state and would lead to the establishment of the first lithium-ion battery supply chain hub in the USA.

ODOT has also worked with the Ohio Bureau of Motor Vehicles (BMV) to develop an alternative fuel vehicle (AFV) registration dashboard (see **Figure 10** and **Figure 11**). The dashboard tracks and publishes EV market adoption trends for the state of Ohio.[3] The passenger car fuel types tracked include battery electric vehicles (BEV), plug-in hybrid electric vehicles (PHEV), fuel cell vehicles (FCV), and compressed natural gas (CNG).

[3] https://drive.ohio.gov/about-driveohio/policy/ohio-alt-fuel-vehicle-reg-dashboard

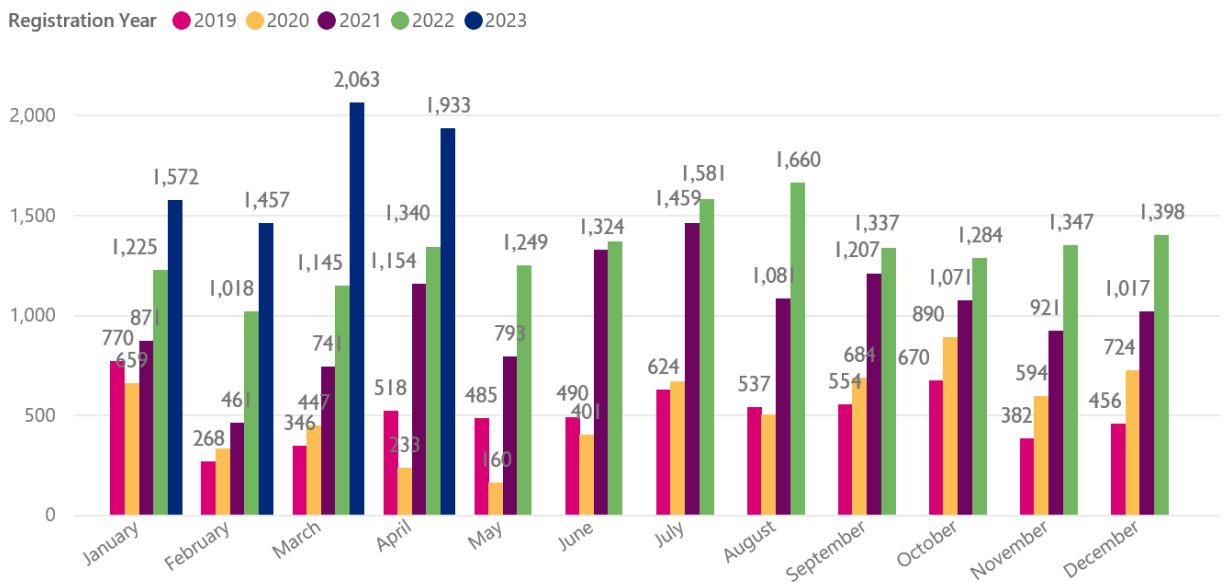

Figure 10: New AFC Registration by Month in Ohio
Source: DriveOhio

The dashboard is updated monthly to provide MPOs, RTPOs, municipalities, and other interested parties relevant data for planning purposes. Page 8 of the dashboard visualizes total and alternative fuel commercial truck registrations. Anonymized data sets are also available for download.

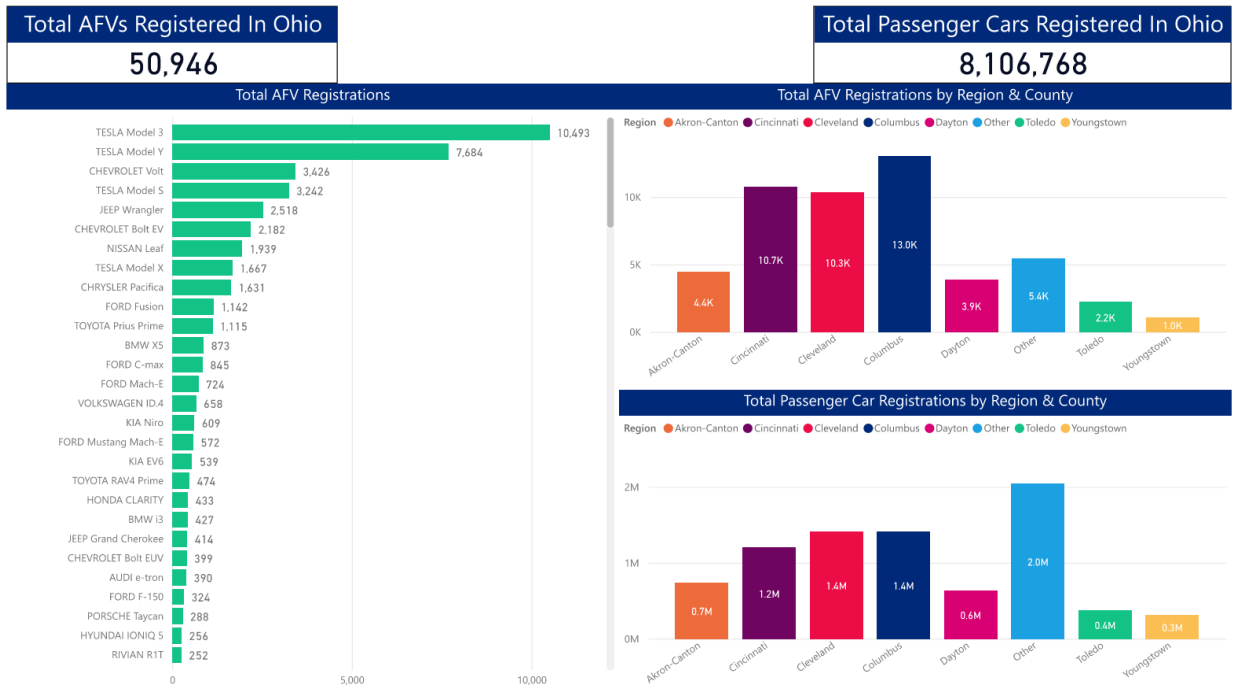

Figure 11: Total EV Registrations in Ohio
Source: DriveOhio

For the NEVI Formula funding program, prospective EVSE site hosts and owner/operators can access the data in this dashboard, and sort the data by region, county, city, five-digit zip code, vehicle model type, or fuel type. This dashboard will help prospective NEVI third party owner-operators assess

local market conditions and long-term viability of charging at prospective locations. ODOT will continue to make this information available throughout the duration of the Ohio NEVI program.

6.4 Ohio Utilities, Electric Grid, and Capacity

Ohio is part of a regional electric market served by PJM Interconnection — the regional transmission operator. The region includes 13 states and the District of Columbia wherein PJM is responsible for maintaining the reliability of the grid, developing regional transmission expansion plans, and administering wholesale energy capacity, and ancillary services markets.

Per Ohio law, the Public Utilities Commission of Ohio (PUCO), regulates providers of all kinds of utility services, including electricity utilities within the state of Ohio. The PUCO's mission is to assure all residential and business consumers have access to adequate, safe, and reliable utility services at fair prices, while facilitating an environment that provides competitive choices.

According to the PUCO, each year, PJM procures enough electric supply resources (capacity) to ensure reliability three years ahead. The reliability target includes an excess reserve margin to address unforeseen widespread outages. PJM's most recent projections indicated a 19.9% reserve margin beginning June 1, 2022, and a 20.3% reserve margin beginning June 1, 2023.

For purposes of meeting the PUCO's statutory load forecasting requirement for fiscal year 2022, the PUCO expects Ohio's peak load, or maximum electric demand, to increase minimally by a total of 5.1% over the 20-year horizon (2020-2040). This is equivalent to a 0.26% electric demand increase per year. Ohio consumed 139.9 million MWh of electricity in 2020 and is forecasted to consume 148.4 million MWh in 2040.[4]

Table 13 and **Figure 12** summarize Ohio's electric utility actors and service areas.

Table 13: Ohio's Utility Actors

Type	Description
PUCO	PUCO oversees the utilities and retailers in Ohio's deregulated electricity market. PUCO sets rules for the electric distribution companies to transmit and distribute electricity to ALL of Ohio's energy customers fairly. PUCO also approves these utilities Standard Service Offer (SSO) for customers who do not actively choose a retail electricity supplier. PUCO also helps organize and oversee utility auctions that determine retail generation service rates in that utility's service zone.
Investor Owned	Ohio's Electric Distribution Companies (EDC's, sometimes called "poles and wires" companies) are the original local utility companies. In recent times, these local utilities have been acquired by four national energy companies: 1) Duke Energy; 2) American Electric Power (AEP); 3) First Energy Companies: which include Ohio Edison, Toledo Edison, and The Illuminating Company (Cleveland); and 4) AES: Also known as AES Ohio serving the greater Dayton region.
Rural Cooperative	Ohio's Rural Electric Cooperatives (REC) are generally referred to as "unregulated utilities" because PUCO does not govern them. With a few exceptions, state statutes and rules governing utilities do not apply to these companies. There are 25 RECs serving rural residents across Ohio.
Municipal	A Municipal electric utility means a recognized municipal political jurisdiction (i.e., City, township, etc.) that owns or operates facilities to generate, transmit, or distribute electricity to local customers. Currently, at least 90 municipalities in Ohio own and operate utilities.

Source: DriveOhio

[4] https://puco.ohio.gov/wps/wcm/connect/gov/e172d55e-87c7-4053-9eb2-d40c94593cb2/Annual+Report+FY+2022.pdf?MOD=AJPERES&CONVERT_TO=url&CACHEID=ROOTWORKSPACE.Z18_K9I401S01H7F40QBNJU3SO1F56-e172d55e-87c7-4053-9eb2-d40c94593cb2-o9pg56i

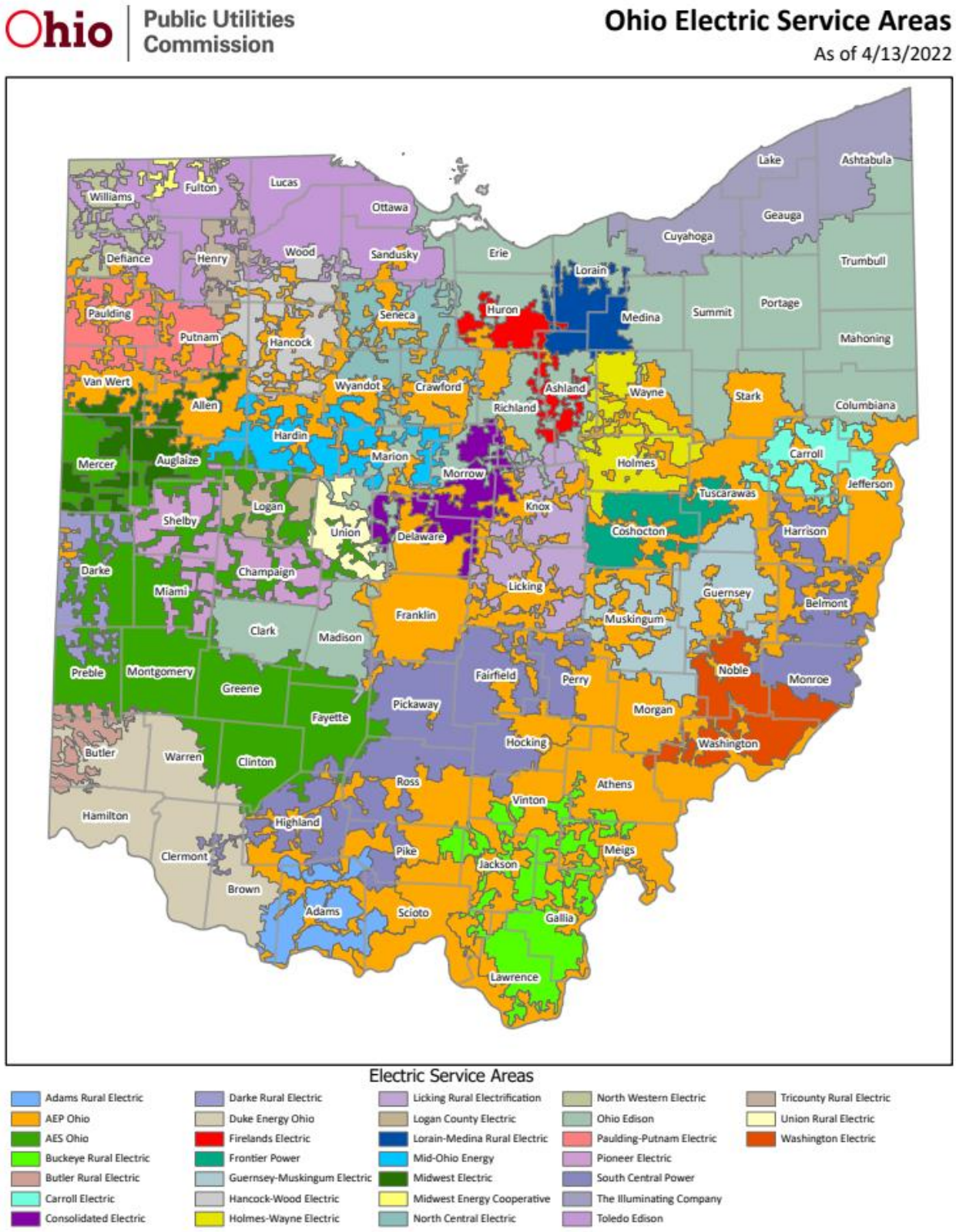

Figure 12: Electric Utility Service Areas in Ohio
Source: Public Utilities Commission of Ohio

Beyond Ohio's regional transmission operator, PJM Interconnection, Ohio is serviced by 32 distinct operating utilities that provide the local power transmission to customers and maintain the local grid infrastructure. While these operating utilities transmit the electricity to local customers, with electric choice in Ohio, customers may choose the electric supplier that provides the generation of their electricity. If a customer chooses a new electric supplier, the customer's local electric utility will continue to deliver the electricity to that customer's home or business. Electric suppliers must be certified by the PUCO before they can sell electricity to retail customers. Certification is an ongoing, thorough process to make sure each supplier is qualified to provide electricity in Ohio.

For the purposes of the NEVI Formula funding program, prospective EVSE site hosts, installers, owners, and operators will primarily be working under rules set by the PUCO and directly working with local electric operating utilities. Ohio's electric operating utilities are broadly broken down into the following distinct categories, each with their own specific capacities and regulations.

As **Chapter 2** introduced, ODOT has ongoing coordination with the PUCO and the state's operating utilities and will continue to do so throughout the NEVI Program implementation period.

6.5 AFC - Corridor Networks

Ohio's Federally Designated AFCs: ODOT has worked with statewide stakeholders, including MPO partners, to receive formal FHWA designation of 15 EV AFCs through FHWA's past five rounds of AFC Nominations as detailed in **Figure 13**. Sixteen miles of I-74 in the Cincinnati were nominated as part of Round 6.

Figure 13: AFCs in Ohio
Source: DriveOhio

As detailed in **Figure 13**, Ohio has nominated and received formal FHWA designation of 16 EV AFCs through FHWA's past six rounds of AFC Nominations. As of FHWA's AFC Round 6 criteria, Ohio's 16 corridors were designated as detailed in **Table 14**.

Table 14: Summary of AFC Mileage in Ohio

AFC EV Route	Mileage	AFC Status
I-270	55.3	Ready
I-275	51.9	Ready
I-675	25.3	Pending
I-680	16.6	Pending
I-70	223.9	Pending/Ready
I-71	246.1	Pending/Ready
I-74	19.3	Pending
I-75	215.3	Pending/Ready
I-76	80.9	Pending/Ready
I-77	161.2	Pending/Ready
I-80	235.9	Pending/Ready
I-90	100.7	Pending/Ready
OH-13	47.8	Ready
US-23	83.8	Pending
US-30	185.6	Pending/Ready
US-33	117.5	Ready
Grand Total	**1867.1**	

Source: DriveOhio

Due to FWHA's new, upgraded AFC Round 6 minimum requirements in 2022, none of Ohio's currently designated corridors shown in **Table 14** currently meet all of the following standards:

- Charging infrastructure installed every 50 miles along the State's portions of the Interstate Highway System within 1 travel mile of the Interstate exit.
- At least four 150kW DCFCs with Combined Charging System (CCS) ports capable of simultaneously DC charging four EVs.
- EV charging infrastructure with minimum station power capability at or above 600kW and supports at least 150kW per port simultaneously across four ports for charging.

This Plan is designed to address how all 15 Ohio Designated AFC's will be fully built out to the FHWA and NEVI Formula funds requirements above.

6.6 Existing Locations of Charging Infrastructure Along AFCs

While none of Ohio's 16 FHWA Designated AFCs are fully built out to NEVI compliant standards, Ohio currently has 237 publicly available DCFC ports (CCS and CHAdeMO), with 13 locations fully meeting NEVI compliant standards, as well as 1,822 publicly available L2 EVSE ports (J1772)[5]. The table and figure below detail the locations of the state's existing EVSE infrastructure in more detail.

[5] https://afdc.energy.gov/corridors

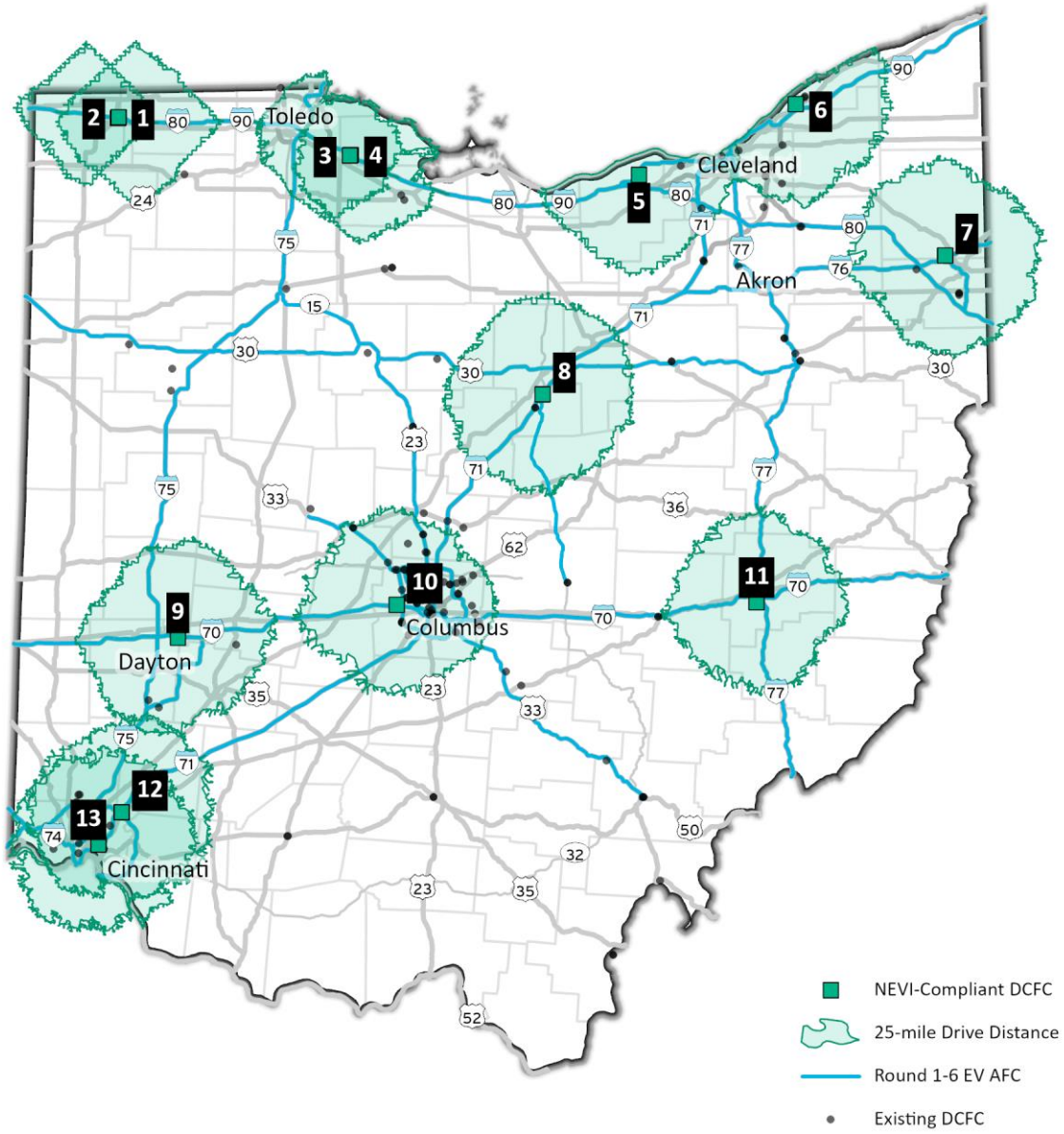

Figure 14: Existing Locations of Charging Infrastructure Along AFCs
Source: DriveOhio

In support of **Figure 14**, ODOT has provided a table of existing DCFC in the state with information on Unique ID, charging speed, AFC corridor location, address, number of connectors, and the EVSE network on which the charger is hosted. **Table 15** details a summary of the NEVI compliant EVSE locations already existing in Ohio.

Table 15: Existing NEVI Compliant DCFC Details

ID	Charger Power (# of CCS ports x kW)	Route	Location	# of CCS Ports	EV Network
1	2x150, 2x350	Turnpike	Tiffin River Service Plaza 21747 CO RD M-50 West Unity, OH 43570	4	Electrify America
2	2x150, 2x350	Turnpike	Indian Meadow Service Plaza 21738 CO RD M-50 West Unity, OH 43570	4	Electrify America
3	2x150, 2x350	Turnpike	Wyandot Service Plaza 6410 CO RD 165 Genoa, OH 43430	4	Electrify America
4	2x150, 2x350	Turnpike	Blue Heron Service Plaza 6164 CO RD 165 Genoa, OH 43430	4	Electrify America
5	2x150, 2x350	I-90	Sheffield Crossing Station 5231 Detroit Rd Sheffield, OH 44054	4	Electrify America
6	2x150, 2x350	I-90	Sheetz 394 7777 Reynolds Rd. Mentor, OH 44060	4	Electrify America
7	2x150, 2x350	I-80	Sheetz 248 2721 Salt Springs Road Girard, OH 44420	4	Electrify America
8	2x150, 2x350	I-71	Walmart 5471 2485 Possum Run Rd Mansfield, OH 44903	4	Electrify America
9	4x150, 2x350	I-70	Walmart 1495 7680 Brandt Pike Huber Heights, OH 45424	6	Electrify America
10	6x150, 2x350	I-70	Walmart 2426 5200 West Point Plaza Columbus, OH 43228	8	Electrify America
11	2x150, 2x350	I-70	Walmart 3262 61205 Southgate Rd Cambridge, OH 43725	4	Electrify America
12	8x150, 2x350	I-275	Harpers Station 11315 Montgomery Road Cincinnati, OH 45249	10	Electrify America
13	6x150	I-71	Meijer 3195 Geier Drive Cincinnati, OH 45209	6	Electrify America

Source: https://hepgis.fhwa.dot.gov/fhwagis/ViewMap.aspx?map=Highway+Information|Electric+Vehicle+(EV-Round+1,2,3,4,5+and+6) and http://www.PlugShare.com; accessed 5/09/2023.

6.7 Known Risks and Challenges

While numerous EVSE are operating throughout Ohio currently, ODOT acknowledges there will be key risks and challenges to deploying the NEVI Program. In addition to state specific consideration of deploying $20.7 million per year in additional EV charging over the next several years, ODOT also recognizes there will be additional unique challenges such as global supply chain delays as the entire US works to deploy $7.5B in new EVSE charging infrastructure.

Table 16 details the high-level known risks and challenges ODOT is tracking.

Table 16: Known Risks and Challenges

Risk / Challenge	Action	Support Needed
Safety • Electrical • Fire Prevention / Response • Building / Site	Ensure workforce is trained, licensed, and certified to work on high-powered electrical equipment and EVSE equipment specifically. Require Electric Vehicle Infrastructure Training Program (EVITP) certification or NEVI approved equivalent. Adhere to all electrical, fire, and building codes. Provide lighting and surveillance as needed.	• EVITP or similar • State and local Emergency Responders • State and local building code officials • Workforce programs
Available Power • Transformers • Infrastructure capacity • Reliability metrics • Peak demand load management	During the planning phase, any siting study information and potential locations must be coordinated with the local utility company for these items. Demand management is a vital consideration to ensure enough power is available and not too costly. Equipment availability such as transformers is important to start discussing during the planning phase. Refer to reliability metric history of utility company.	• Utility Company • EVSE Vendors • Equipment Operator
Policy • EV only space requirements • ADA EV space and access requirements • Code requirements	Parking spaces, especially in garages are expensive. State and local agencies need to consider code changes that may eliminate disincentives to install EVSE. Additionally, state and local (Title II) agencies must adhere to ADA regulations when deploying chargers. "EV Ready" codes for future expansion should also be considered.	• Design Engineering • State and Local Agencies • Equipment Operator • Property Owner
Location Viability, Permitting/Agreements • Lack of space for EVSE • Right of Way • Leased property • Private property • Tow vehicle access	Certain constraints and requirements may exist for various properties. Permitting and agreements must be concise, however all parties should be flexible when permissible to enable successful charger deployment. It is important to note that electric vehicles will be used to tow cars, RVs, and other trailers, so space must be made available to pull in and through to charge without unhooking their loads or backing out of the charging space into traffic.	• Design Engineering • State and Local Agencies • Equipment Operator • Property Owner
Compatible Cable Plugs	Although the EV industry is moving toward a single plug standard, currently, multiple connectors exist for DCFCs. It is important that other connections are considered as these are deployed.	• EVSE Vendors
Communication Link Reliability • Payment • Monitoring	Connectivity is important for chargers to work. A loss of connection keeps chargers out of service. Equipment must be monitored by operator and equipment returned to service without delay.	• EVSE Vendors • Communications Company • Equipment Operator
Cybersecurity	Cyberattacks are always a risk with technology. Credit card information must be protected. Viruses spreading between automobiles, chargers, and others connected. Perform Cybersecurity testing in accordance with industry best practices such as user identity and access management, cryptographic agility and support of multiple PKIs. Implement third party audits.	• Operators • EVSE Vendors • Network Integrators
Damage • Vandalism • Cords • Vehicle crash	Specifications for equipment protection such as curbs, bollards, retractable cords, vandal proof chargers. Chargers can be out of service if cords are driven over, or other damage occurs.	• Design Engineering • Vendors • Equipment Operator • Property Owner
Matching Funds	Bids are not received for stations in underserved, rural, or Appalachian communities. Mitigate by considering grouping sites with varying levels of attractiveness so the overall 20% match is sustainable and/or provide O&M (including power costs) as part of funding package.	• Joint Office

Risk / Challenge	Action	Support Needed
Business Model Viability • Loss of profitability • Demand charges • Lack of use	Costly "demand charges" occur during peak use, and when chargers get minimal use over time. Siting studies and strong public engagement efforts are an important mitigation factor. Research and implement equipment where available rates/tariffs are in place and ensure demand management software is implemented.	• Design Engineering • Utility Company • PUCO • Vendors
Extreme Weather • Lightning • Water / Flooding • High Winds	Inclement weather may prevent charger usage by damage or limiting access, so ensure chargers and charging EV's are located out of flood prone areas, have adequate surge suppression, and can withstand high winds.	• Design Engineering • EVSE Vendors
Supply Chain • Utility equipment delays • EVSE equipment delays • Electrical contractor capacity • Permitting delays	Due to the impacts of the pandemic, utility and EVSE equipment are currently facing production and delivery delays, which are only expected to worsen as 50 states seek to deploy NEVI compliant infrastructure simultaneously. ODOT will seek to work with key partners to mitigate delays to the extent possible.	• Utility Coordination • EVSE Vendor Coordination • Local Contractor Coordination • Local Jurisdiction Coordination
Federal Rulemaking	The State issued procurement in advance of final federal rulemaking which came out in February 2023 which did not allow for all final rules to be included in the initial RFP. Remain abreast of all latest related federal rule updates, including but not limited to environmental and ADA regulations related to EVSE projects. Ensure program requirements and final rules are incorporated into the contract language for proper compliance.	• Joint Office • EVSE Vendors

Source: DriveOhio

ODOT will continue to monitor risks and challenges associated with NEVI Formula funding and make updates to this Plan as more information is available on these topics.

Chapter 7 EV Charging Infrastructure Deployment

This chapter discusses the overarching strategy for ODOT's NEVI EV charging infrastructure installations and associated policies to meet ODOT's vision and goals.

7.1 Funding Sources

Ohio is allocated $140 million in NEVI Formula funds through 2026 to create an EV charging network across the state, which will cover build-out of Ohio's AFCs and allow ODOT to address additional priorities as their program evolves. Federal funding will cover up to 80% of the program funding. ODOT will seek to have vendors or site hosts bidding on the projects provide the required 20% match. Volkswagen settlements funds have been deemed ineligible to be used as state match, however utility program funds may be used as match when available. ODOT is open to covering operations and maintenance costs, including utility fees in the overall project cost and using their federal allocation to cover these costs.

7.2 2022 Infrastructure Deployments/Upgrades

ODOT released a procurement in late 2022 to fill 30 gaps and build out their Interstate AFCs. They received over 300 candidate sites for consideration and will make contract awards in the 3rd/4th quarter of 2023. An online mapping tool was developed to support the Phase I procurement and help communicate with proposers, utilities, and technical partners which sites were eligible for funding.

The following subsections include information about how NEVI funded EVSE deployments will be built out to "corridor ready" status, and address needs for upgrades, redundancy, increases in capacity, freight movement, public transit needs, and local, state, and federal policy considerations over the five-year NEVI build-out. ODOT has followed the process identified in **Figure 15** to determine how to group interchanges for procurement.

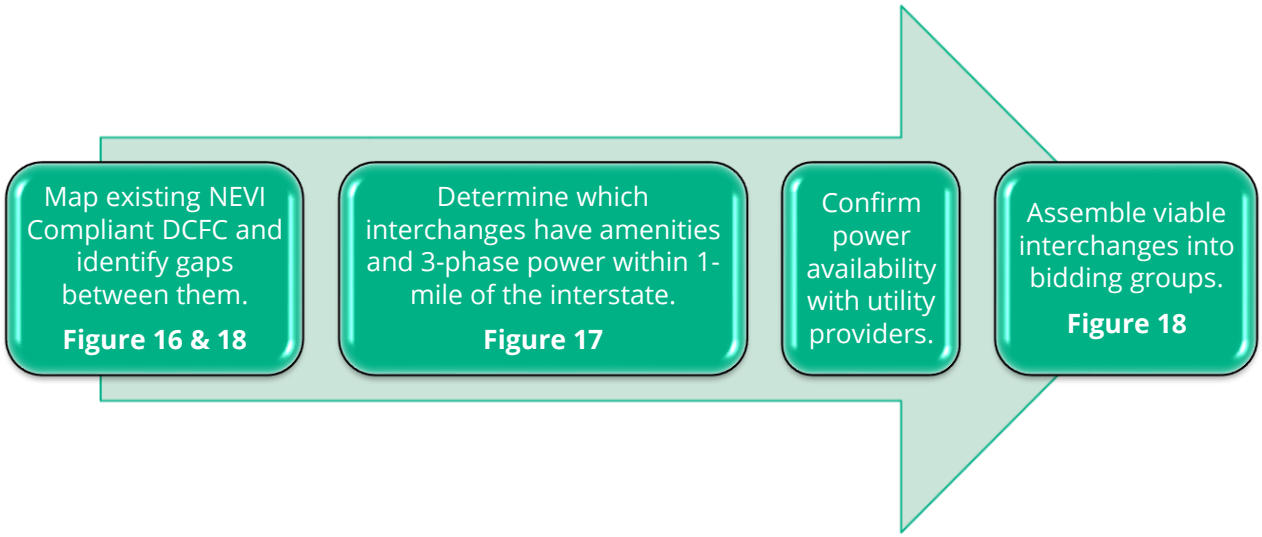

Figure 15: Process for Identifying DCFC Interchange Groups for Competitive Procurement
Source: DriveOhio

ODOT will aim to install NEVI compliant chargers at one interchange identified within each of the groups of interchanges as part of Phase I.

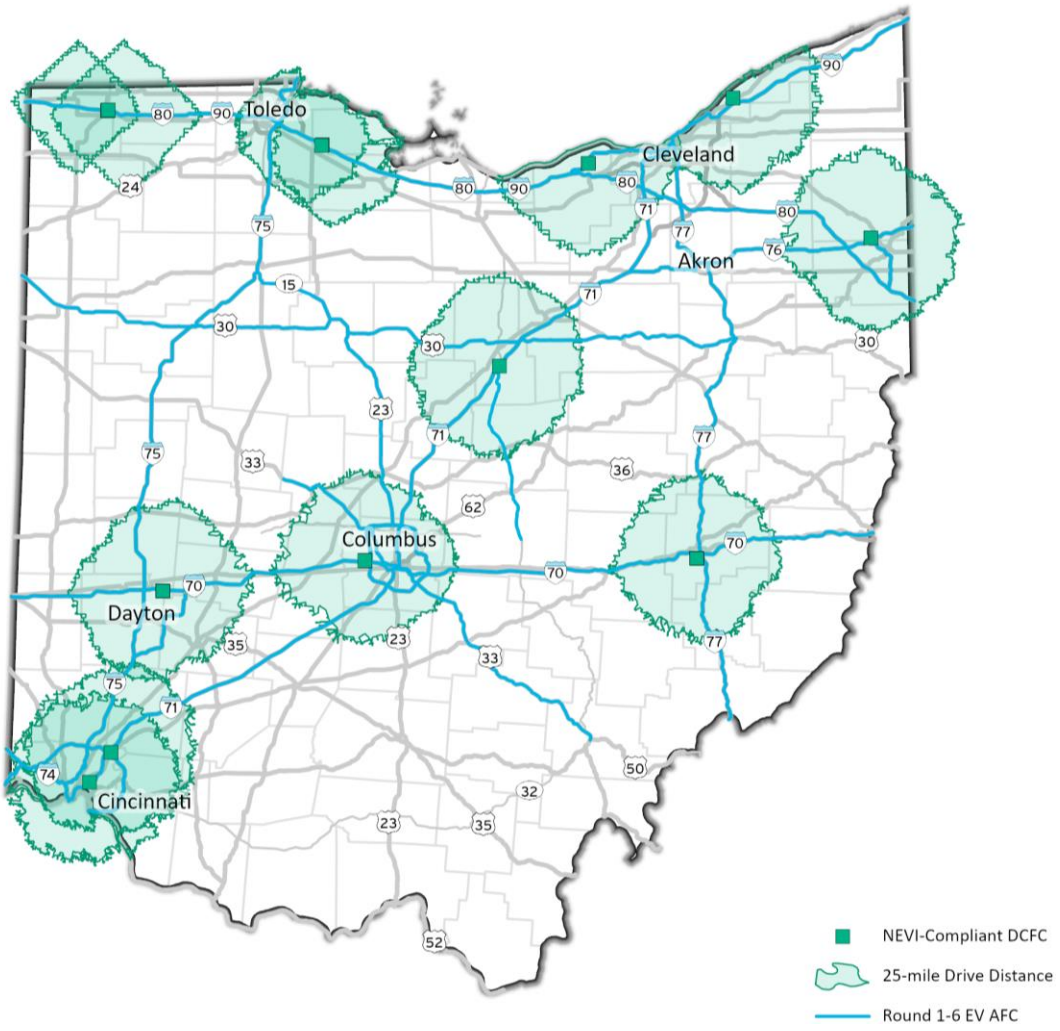

Figure 16: Existing NEVI Compliant DCFC Locations along AFCs
Source: DriveOhio

Figure 17 displays a sample of the site review conducted to assess if the Phase I interstate interchange areas had sufficient amenities and power to provide viable site options within a 1-mile travel distance polygon (shown in blue). The 1-mile travel distance polygon was developed using a similar approach to the MUTCD method for specific service sign distances[6] by measuring all possible 1-mile travel routes along the roadway network from the exit ramp termini. If any of the following were true, the site was deemed viable and provided as a candidate site to the appropriate utility company or companies.

- There is one or more truck stops
- There is one or more retail centers or big box stores

[6] https://mutcd.fhwa.dot.gov/htm/2009r1r2/part2/fig2j_02_longdesc.htm

- There is a combined total of three or more gas station/convenience stores or high turnover restaurants with at least one of each.

The utility companies either confirmed the sites are viable or noted capacity constraints that would add costs.

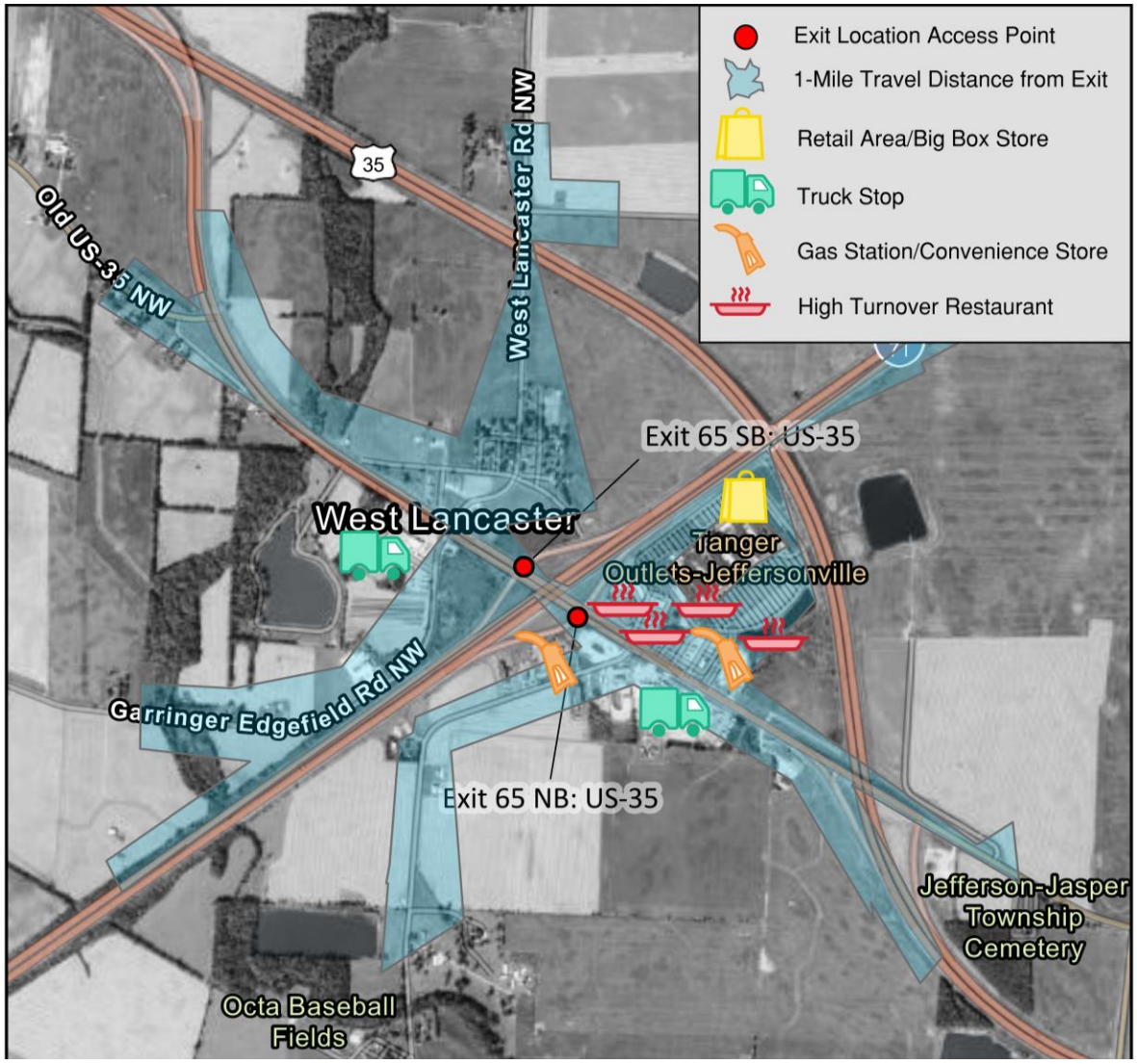

Figure 17: Example Analysis of Exit
Source: DriveOhio

Figure 18 depicts the gaps originally identified along I-70. To fill the gaps ODOT needs to add NEVI compliant charging installations in five places, represented by Groups. The groupings of exits that can fill each gap are indicated by color.

Along I-70 there are eighteen options for where the chargers can go including two options for Gap 1, three options for Gap 2, and more than three options for each of Gaps 3 and 4. Groups were chosen to maintain the minimum required 50-mile spacing regardless of which exit within the group is selected. Gap 3 is long enough that three groups are needed. Any one exit from each of group C, D, and E will fill Gap 3.

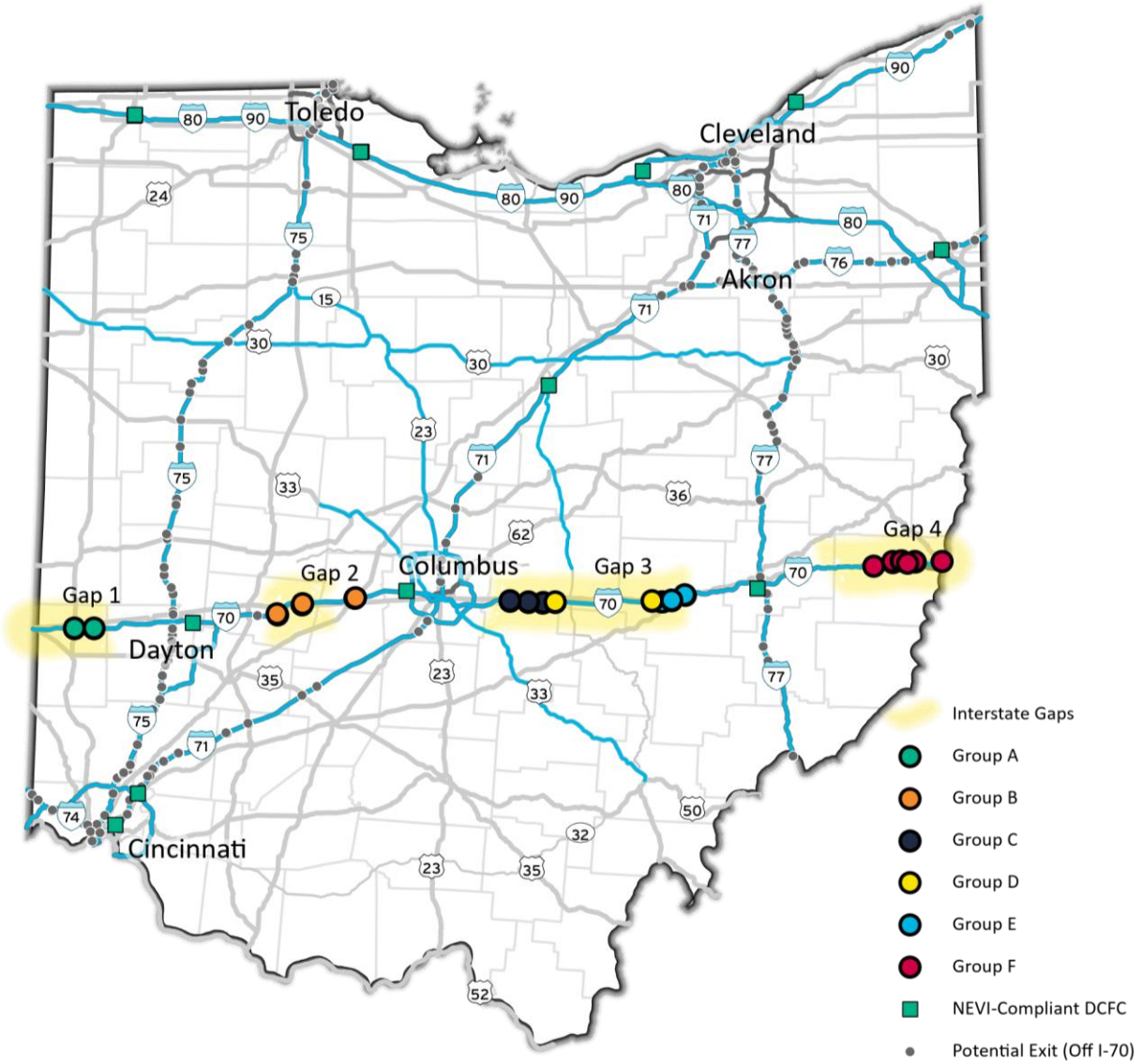

Figure 18: Charging Gaps and Groups Along I-70
Source: DriveOhio

ODOT will deploy four 150 kW chargers at any one of the locations within each group to fulfill NEVI requirements for those facilities. To conserve space, **Table 17** only includes one interchange location in each group. EV Network and station ownership will depend on bids, so those columns were not included.

Table 17: Charging Deployment Location Details

Unique ID	Route	Location	Utility Territories	FY22 Funding Amount	FY23-FY26 Funding Amount
I-70_GrpA_Ex010	I-70 (Rounds 1-6 Pending)	Exit 10	AES Ohio, Darke Rural Electric	NEVI/EVSE Owner	80% NEVI; 20% EVSE Owner

Unique ID	Route	Location	Utility Territories	FY22 Funding Amount	FY23-FY26 Funding Amount
I-70_GrpB_Ex066	I-70 (Rounds 1-6 Pending)	Exit 66	AES Ohio, Darke Rural Electric	NEVI/EVSE Owner	80% NEVI; 20% EVSE Owner
I-70_GrpC_Ex118	I-70 (Rounds 1-6 Pending)	Exit 118	AEP Ohio	"	"
I-70_GrpD_Ex160	I-70 (Rounds 1-6 Pending)	Exit 160	AEP Ohio	"	"
I-70_GrpE_Ex218	I-70 (Rounds 1-6 Pending)	Exit 218	AEP Ohio	"	"
I-71_GrpC_Ex069	I-71 (Rounds 1-6 Pending)	Exit 69	AES Ohio	"	"
I-71_GrpD_Ex100	I-71 (Rounds 1-6 Pending)	Exit 100	AEP Ohio	"	"
I-71_GrpE_Ex121	I-71 (Rounds 1-6 Pending)	Exit 121	AEP Ohio	"	"
I-71_GrpF_Ex204	I-71 (Rounds 1-6 Pending)	Exit 204	Lorain-Medina Rural Electric	"	"
I-71_GrpG_Ex240	I-71 (Rounds 1-6 Pending)	Exit 240	The Illuminating Company	"	"
I-74_GrpA_Ex011	I-74 (Rounds 1-6 Pending)	Exit 11	Duke Energy Ohio	“	“
I-75_GrpA_Ex022	I-75 (Rounds 1-6 Pending)	Exit 22	Duke Energy	"	"
I-75_GrpB_Ex038	I-75 (Rounds 1-6 Pending)	Exit 38	Duke Energy	"	"
I-75_GrpC_Ex058	I-75 (Rounds 1-6 Pending)	Exit 58	AES Ohio	"	"
I-75_GrpD_Ex092	I-75 (Rounds 1-6 Pending)	Exit 92	AES Ohio	"	"
I-75_GrpE_Ex125	I-75 (Rounds 1-6 Pending)	Exit 125	AEP Ohio	"	"
I-75_GrpF_Ex159	I-75 (Rounds 1-6 Pending)	Exit 159	AEP Ohio	"	"
I-75_GrpG_Ex181	I-75 (Rounds 1-6 Pending)	Exit 181	Toledo Edison, Hancock-Wood Electric	"	"
I-75_GrpH_Ex193	I-75 (Rounds 1-6 Pending)	Exit 193	Toledo Edison	"	"
I-76_GrpA_Ex031	I-76 (Rounds 1-6 Pending)	Exit 31	Ohio Edison	"	"
I-76_GrpB_Ex048	I-76 (Rounds 1-6 Pending)	Exit 48	Ohio Edison	"	"
I-77_GrpA_Ex001	I-77 (Rounds 1-6 Pending)	Exit 1	AEP Ohio	"	"
I-77_GrpB_Ex046	I-77 (Rounds 1-6 Pending)	Exit 46	AEP Ohio	"	"
I-77_GrpC_Ex081	I-77 (Rounds 1-6 Pending)	Exit 81	AEP Ohio, Frontier Power	”	”
I-77_GrpD_Ex101	I-77 (Rounds 1-6 Pending)	Exit 101	AEP Ohio	"	"
I-77_GrpE_Ex109	I-77 (Rounds 1-6 Pending)	Exit 109	AEP Ohio	"	"
I-77_GrpF_Ex155	I-77 (Rounds 1-6 Pending)	Exit 155	The Illuminating Company	"	"

Unique ID	Route	Location	Utility Territories	FY22 Funding Amount	FY23-FY26 Funding Amount
I-90_GrpA_Ex223	I-90 (Rounds 1-6 Pending)	Exit 223	The Illuminating Company	"	"

Source: DriveOhio

The above discussion aligns with Phase I. Following Phase I, Phase II will address the remaining AFCs located on U.S. and State Routes. In addition to approximate Phase I locations, preliminary locations for Phase II and some of sites anticipated for Phase III are identified in **Figure 19**.

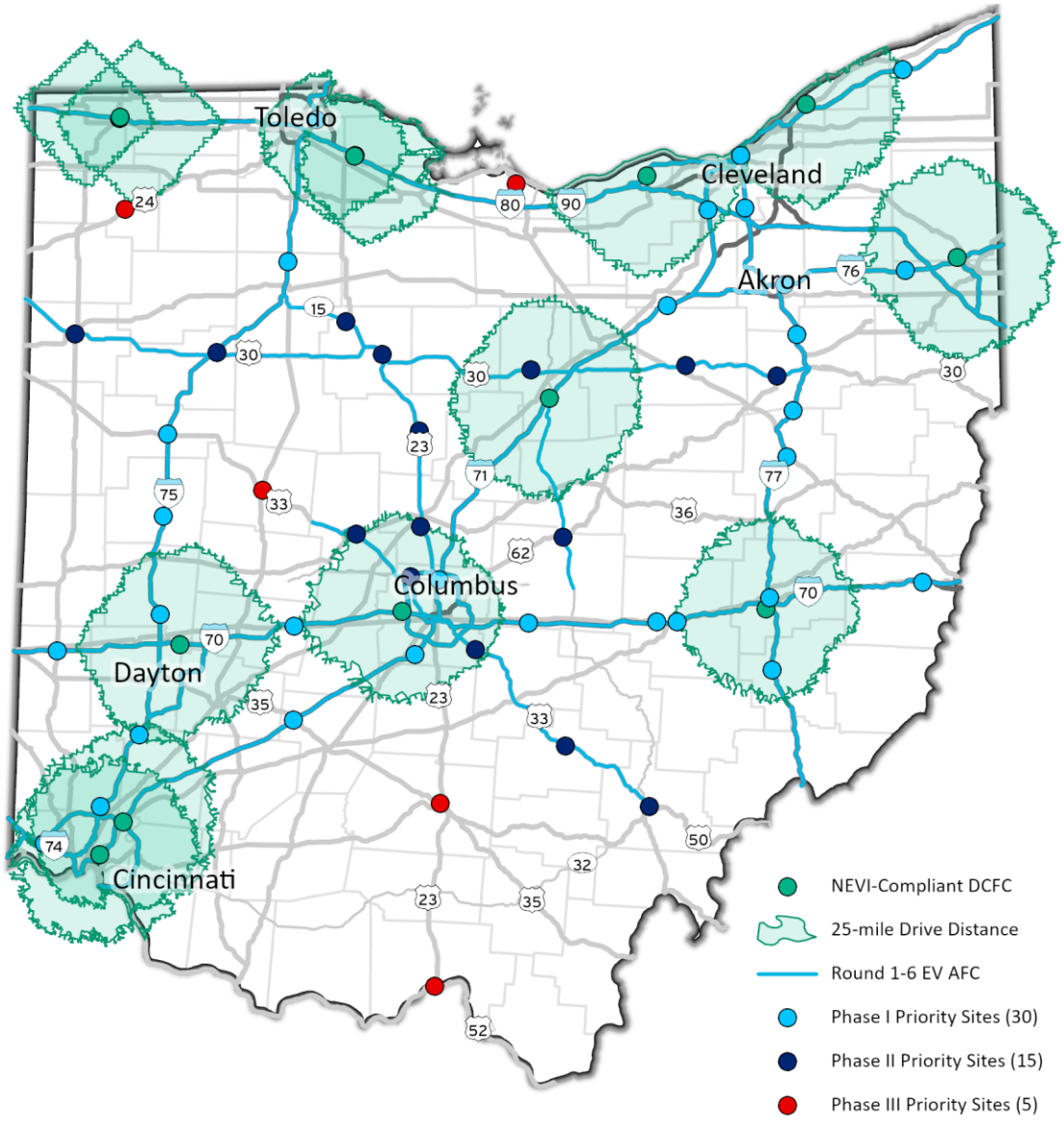

Figure 19: Preliminary Phase I, II, and III NEVI Compliant Charging Locations
Source: DriveOhio

Once the USDOT Secretary has certified Ohio's AFCs as "fully built out", ODOT is interested in adding charging at some of the remaining gaps previously prioritized in their 2020 Electric Vehicle Charging Study. These general target locations include the following, which are also shown in **Figure 19**:

- OH-2 intersection with US-250, Sandusky, OH
- US-23 intersection with Charleston Pike, Chillicothe, OH
- US-23 intersection with US-52, Portsmouth, OH
- US-24 intersection with N. Clinton St., Defiance, OH
- US-33 intersection with US-68, Bellefontaine, OH

Other sites will likely be included at additional U.S. and State Routes as part of Phase III. These will be identified as planning moves forward.

Table 18 shows how building out each phase with NEVI compliant charging sites will make progress towards ODOT stated outcome of "90% of Ohio Residents live within 25 miles of NEVI Compliant Chargers."

Table 18: Ohio Population Reached by Chargers

Population within 25 miles of...		
Existing Charging	8,008,091	69%
+ Phase I Sites	10,594,587	91%
+ Phase II Sites	11,101,116	95%
+ 5 key Phase III Sites	11,324,807	97%
= Total Population Covered	11,641,879	100%

Source: DriveOhio

7.2.1 Upgrades of Corridor Pending Designations to Corridor Ready Designations

As noted earlier, Ohio has no AFCs that currently meet the new FHWA Round 6 and NEVI compliant standards. To be fully built Ohio needs to install chargers at a minimum of 46 locations along the 17 designated EV AFCs shown in **Table 19.** The Ohio Turnpike Infrastructure Commission (OTIC) owns and operates the I-80 corridor. As such, the I-80 corridor is not being included for NEVI program funding since OTIC would have to be federalized if it accepted federal funds. OTIC has been making strides to build out their facility without federal funds.

Based on EVSE vendor outreach, it was assumed that the average cost to build a new NEVI compliant site would range from $600,000 to $1.2 million depending on site attractiveness (i.e., expected revenue or competition in bidding), the cost of upgrading power service, and any other site or charger specific infrastructure needs (i.e., use of solar or storage). For planning purposes, we are using $1 million per NEVI-compliant site.

Table 19: Range of Estimated Buildout Costs by AFC Route

Ex. AFC Route	# NEVI Compliant Charging Sites	Groups of Chargers (that fill Gaps)	Options to Fill Gaps	Min. Build-out $
I-70	3	6	19	$6,000,000
I-71	2	5	22	$5,000,000

Ex. AFC Route	# NEVI Compliant Charging Sites	Groups of Chargers (that fill Gaps)	Options to Fill Gaps	Min. Build-out $
***I-74**	0	1	6	$1,000,000
I-75	0	8	56	$8,000,000
I-76	0	2	11	$2,000,000
I-77	1	7	31	$7,000,000
[†]I-80	4	-	-	Ohio Turnpike
I-90	2	1	4	$1,000,000
[‡]SR-13	0	1	1	$1,000,000
SR-15	0	1	1	$1,000,000
US-23	0	3	3	$3,000,000
[§]US-30	0	6	11	$4,000,000
US-33	0	5	12	$3,000,000
[¶]I-270	0	-	-	-
[¶]I-275	1	-	-	-
[¶]I-675	0	-	-	-
[¶]I-680	0	-	-	-
17 AFCs	**13**	**46**	**177**	**$46,000,000**

** I-74 was awarded as an EV AFC in Round 6.*

[†] Due to constraints with Turnpike Toll Roads receiving federal funding, ODOT will not seek to site NEVI locations on the Turnpike portions of I-80 in Ohio.

[‡] The existing NEVI compliant site on I-71 Exit 169 serves both I-71 and SR-13. It is not shown in this row to prevent double counting.

[§] If I-75 Exit 135 is selected in NEVI Procurement Phase I, it will serve both I-75 and US-30, reducing the number of groups of chargers on US-30 by one.

[¶] These are metropolitan "outer belt" portions of the Interstate, primarily used for local travel and connecting to other major Interstates for distance travel. ODOT will seek to prioritize locations that serve both outer belts and connecting Interstates in its prioritization system further detailed below.

Source: DriveOhio

ODOT also evaluated the cost of building out a NEVI compliant site at all the viable interchanges identified as part of their initial site review. At $1 million per site this would cost $177,000,000 with an 80% federal share of $141,600,000 and 20% match of $35,400,000 from the bidding owner/operator.

Chapter 5 of this Plan provides details on the current understanding of how ODOT will go to bid, procure, and contract with third party EVSE owner-operators as the mechanism to disburse NEVI funds to achieve this Plan's goals.

ODOT estimates that pending final bids and costs from third party NEVI-funded EVSE owner operators, ODOT will be able to reach NEVI "fully built out" designation with a spend ranging from $30M – $50M, leaving significant funds to solve for additional state priorities such as additional nominated AFCs in future rounds, remaining US and State Routes, increasing the number of chargers at existing sites, other significant routes, additional equity based locations, state tourist attractions, and freight corridors. Ohio's NEVI Formula Funding is therefore expected to disburse in the phases described in **Figure 2**.

7.2.2 Increases of Capacity / Redundancy along Existing AFC

As **Table 19** in **Section 7.2.1** and the following discussion indicates that the NEVI Formula funding ODOT will administer is sufficient to cover the costs of a spectrum of "fully built out" approaches. As

described in detail in **Chapter 4** and **Chapter 5**, ODOT's goal is to utilize NEVI Formula funds to catalyze the Ohio market to ensure a robust network of NEVI compliant EVSE owned and operated by non-state, public, and private parties including businesses of various kinds.

ODOT's NEVI Plan seeks to strike an appropriate balance of ODOT assessed priority locations to fill gaps using competitive procurements and a funding awards process that will allow the market to decide the appropriate level of redundancy for Ohio's AFCs.

7.2.3 EV Freight Considerations

DriveOhio's August 2021 Freight Electrification Report outlines Ohio's path forward for commercial vehicle electrification. The Report details existing practices and the future framework needed to facilitate the freight and logistics industries transition to EVs. Collectively, UPS, FedEx, DHL, Bimbo Bakeries, PITT Ohio, Firefly Transportation Services (now Lazer Spot Inc.), and R&L Carriers cite increased safety, reduced carbon emissions, driver preference, and a competitive edge and job creation as reasons to electrify their fleet operations.

As described in **Chapter 1**, ODOT plans to evaluate opportunities to utilize NEVI Formula funding remaining after building out the State's AFCs. One option being considered is funding EVSE projects that will support freight electrification.

7.2.4 Public Transportation Considerations

ODOT's NEVI Plan's first focus is fully building out Ohio's FHWA designated AFCs as described in detail above, however ODOT plans to continue to evaluate opportunities to support transit electrification and connect transit riders to other transportation electrification and mobility options in future years of the NEVI program. ODOT plans to make updates to its NEVI Plan annually and will include updates to its Public Transit Electrification plans pending further guidance from the Joint Office and FHWA.

ODOT will be in a strong position to make such updates to its NEVI Plan and coordinate with the state's transit agencies. ODOT Transit staff coordinate several programs that ensure funding, participation and quality assurance for Ohio's urban and rural transit riders throughout the state. ODOT is in a unique position to work with state, local and federal government agencies as well as initiatives, projects, and programs outside of government but relevant to Ohioans who depend on transit initiatives to get them where they need to go. ODOT does this through the operation and administration of the following programs, services, and resources related to statewide transit, as shown in **Table 20**.

Table 20: ODOT Transit Activities

ODOT Transit Activities	Description
Transit Vehicle Contracts and Disposition	Transit agencies can coordinate the purchase of vehicles through ODOT's Cooperative Purchasing Program.
Technical Assistance Reviews	ODOT reviews and ensures that Rural and Specialized Transit Programs are complying with federal laws.
Transit STIP	Transit Transportation Improvement Program is a coordination of transit projects for the Statewide Transportation Improvement Plan.
Coordinating Transit Data	Training support on new tools to improve coordination of ODOT's Ellis project management system and Transit STIP/TIP data.
Transit Asset Management	Improving asset management practices of transit capital assets in order to maintain a "State of Good Repair."

ODOT Transit Activities	Description
State Safety Oversight	Fulfilling a federal requirement to ensure states have and implement a State Safety and Security Oversight program for its rail transit system.
Public Transportation Agency Safety Plans	ODOT assists with the statewide implementation of this federal program ensuring safety requirements are met.
Mobility Ohio	A multi-agency effort to improve Ohio's health and human services transportation network while mitigating fraud.
Coordinated Transit Plans	ODOT maintains the most up-to-date Coordinated Plans.
Transit Project Coordination	ODOT provides direct coordination between Ohio's transit agencies, Metropolitan Planning Organizations, and the state of Ohio.
Transportation Plans	ODOT Identifies community resources for transportation and mobility in an effort to understand gaps and unmet needs.
Civil Rights & Compliance	ODOT ensures Transit compliance with federal civil rights laws and regulations as it applies to transit funding and applicable programs.
ODOT Transit Website	More information on all of the above can be found on ODOT's transit website: https://www.transportation.ohio.gov/programs/transit/transit-coordination-resources/transit-coordination-compliance-oversight-resources

Source: ODOT

As stated above, ODOT plans to make updates to its NEVI Plan annually and will include updates to its Public Transit Electrification plans pending further guidance from the Joint Office and FHWA.

7.3 FY23-26 Infrastructure Deployments

ODOT will initially focus on building out FHWA Designated AFCs. After the US DOT Secretary has certified Ohio's AFCs as "fully built out" to NEVI compliant standards, ODOT will seek to expand NEVI Formula funded EVSE deployments to additional priority areas. In general, the expected total federal allocation and matching funds will follow the values noted in **Table 21**.

Table 21: Expected Y2-Y5 Total Federal and Matching Funds

Source of funding	Federal Funding	Matching Funding
Program Management	$6,725,766 | 4.8%	
EVSE Deployment & O&M	$133,394,350 | 95.2%	$28,024,023 | 100%
Total Program Funding	$140,120,116	$28,024,023
Total %	**80%**	**20%**

Source: DriveOhio; Bipartisan Infrastructure Law

ODOT has also begun evaluating its US and State Route AFCs (mostly Phase II) for installation of DCFCs. To date, NEVI-specific analysis in Ohio has been limited to Interstates. Some US and State routes are limited access and function similarly to Interstates, so the same methodology can be used. Where US and State routes are not limited access, a new methodology is needed. The Highway Capacity manual differentiates these forms as "freeways" and "multilane highways", where a key difference is that multilane highways have at-grade intersections. The following steps were used to find multilane highway segments of routes, as illustrated in **Figure 20**.

1. The entire corridor is assumed to be freeway to start.
2. Begin at one end of the corridor (Point A) and travel until an at-grade intersection is encountered (Point B). Split the roadway here and consider the portion ahead as multilane highway (Point C).
3. The multilane highway section then continues to the last at-grade intersection (Point D) before the next ramp (Point E). Because of this methodology, a single at-grade intersection between two ramps is coded as a freeway, even though it is accessible without the use of a

ramp. All such points encountered in this process were in rural areas that would not be good candidates for charging.

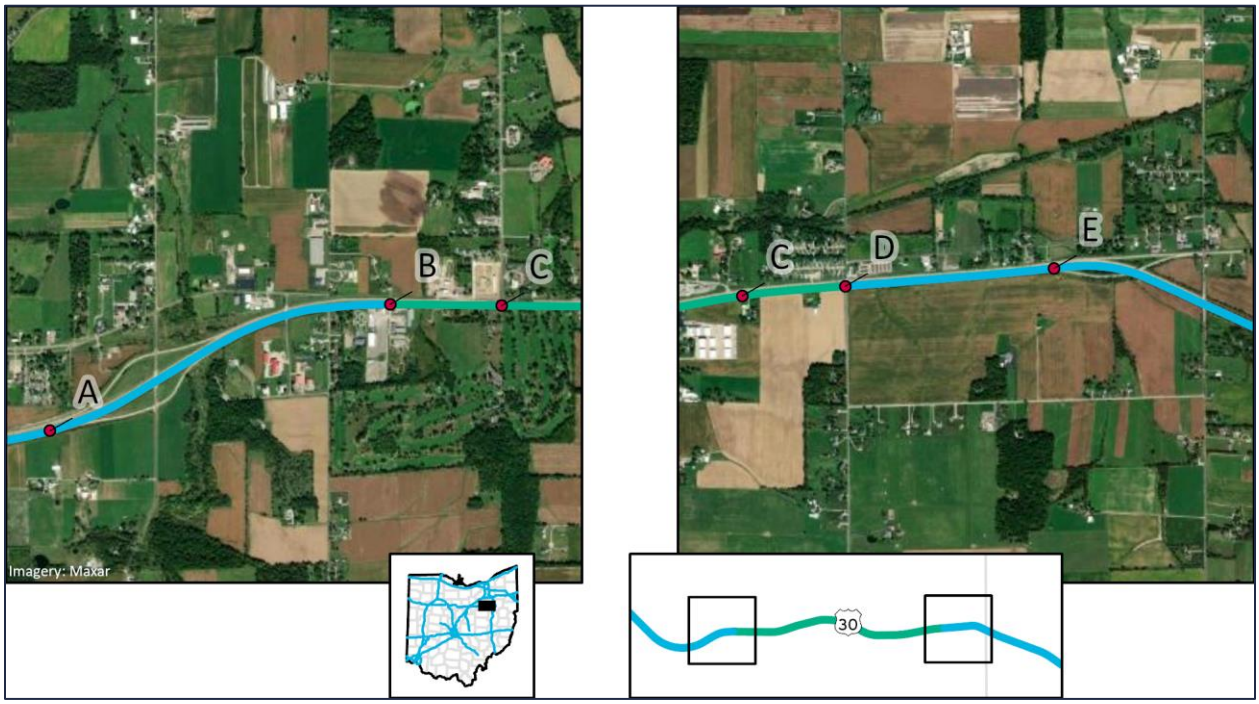

Figure 20: Determining Multilane Highway Segments
Source: DriveOhio

Overall, approximately 58% of US and State Route AFC centerline miles are freeways while about 42% were multilane highways. Details by route can be seen in **Table 22**.

Table 22: Limited Access Miles along Ohio US and State Route AFCs

AFC	Freeway Length, Miles	% of Length	Multilane Highway Length, Miles	% of Length	Total Length, miles	# of Multilane Highway Segments
SR-13	0.00	0.00%	47.47	100.00%	47.47	1
SR-15	9.40	54.95%	7.71	45.05%	17.11	3
US-23	34.14	51.37%	32.31	48.63%	66.45	4
US-30	117.66	62.95%	69.24	37.05%	186.9	13
US-33	91.49	77.79%	26.12	22.21%	117.61	4
Total	**252.68**	**58.02%**	**182.86**	**41.98%**	**435.54**	**25**

Source: DriveOhio

The buffered areas for each segment ranged in size from 1.0 square mile to 45.5 square miles. Due to the large area covered by a 1-mile buffer of the multilane highway segments and the rural nature of most segments, a second step was taken to narrow down these portions to areas where charging is likely to be more cost effective. Land cover was analyzed in these areas to differentiate developed

areas from areas which are primarily farmland and forest. The same land cover dataset was used in **Chapter 6.1** – the National Land Cover Database (NLCD), 2019. The NLCD identifies four categories of developed areas: Open Space, Low Intensity, Medium Intensity, and High Intensity. An example of this data for the same stretch of US-30 as **Figure 20** is shown in in **Figure 21**. The sum of all four areas was divided by the total buffer area to calculate the Percentage of Developed Area for each buffer, as seen in **Figure 22**.

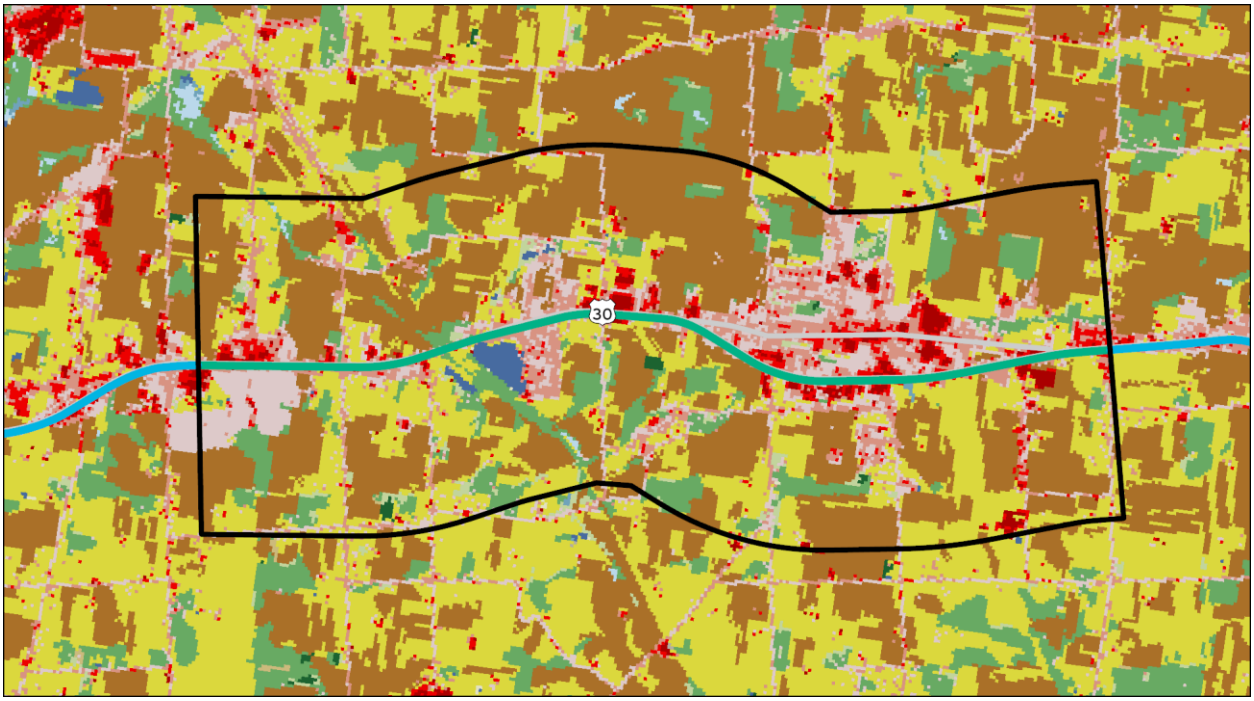

Figure 21: NLCD Data for a Segment along US-30
Source: DriveOhio

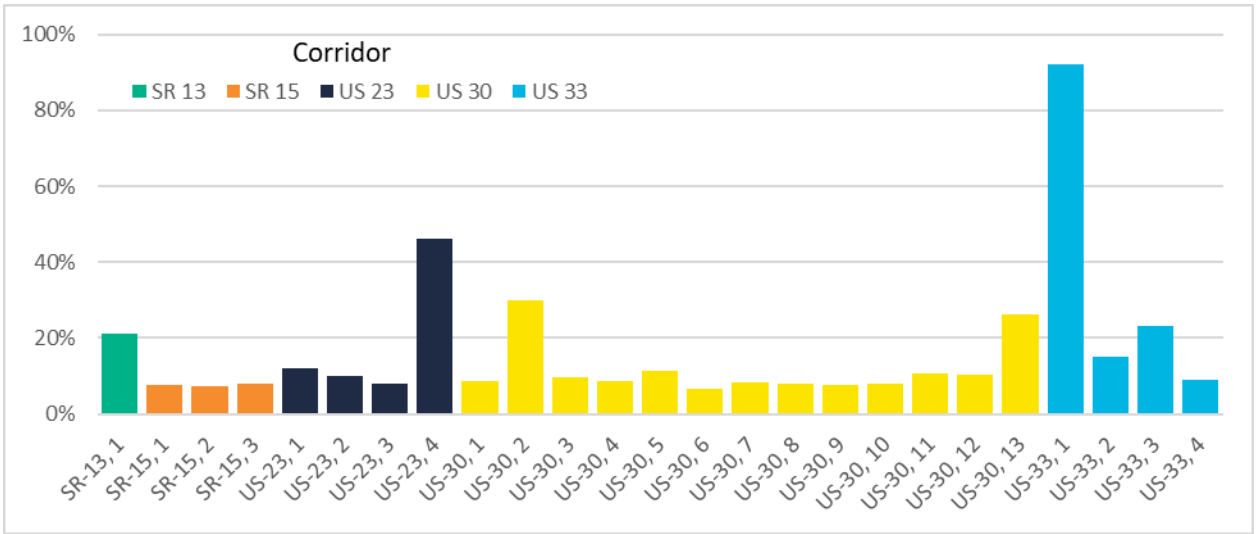

Figure 22: Percent Developed Area in Non-Limited-Access Areas
Source: DriveOhio

Looking at the distribution of developed area, 20% emerges as a threshold for determining if an area is likely to support charging or not. As such, the following six areas were included in the grouping analysis, as seen in **Table 23**. These sites were also compared to projects estimated at over $5m in construction value that ODOT funded in the next few years to avoid installing a charger in a location where a construction project would remove access to that charger.

Table 23: Eligible Multilane Highway Segments

Route	Approximate Start Mile	Approximate End Mile
SR-13	66	87
US-23	101	122
US-30	12	14
US-30	171	177
US-33	108	128
US-33	140	143

Source: DriveOhio

A comparison of the multilane highway portion discussed above to the nearby drive-distance polygons from the freeway portion of the same road is shown in **Figure 23**.

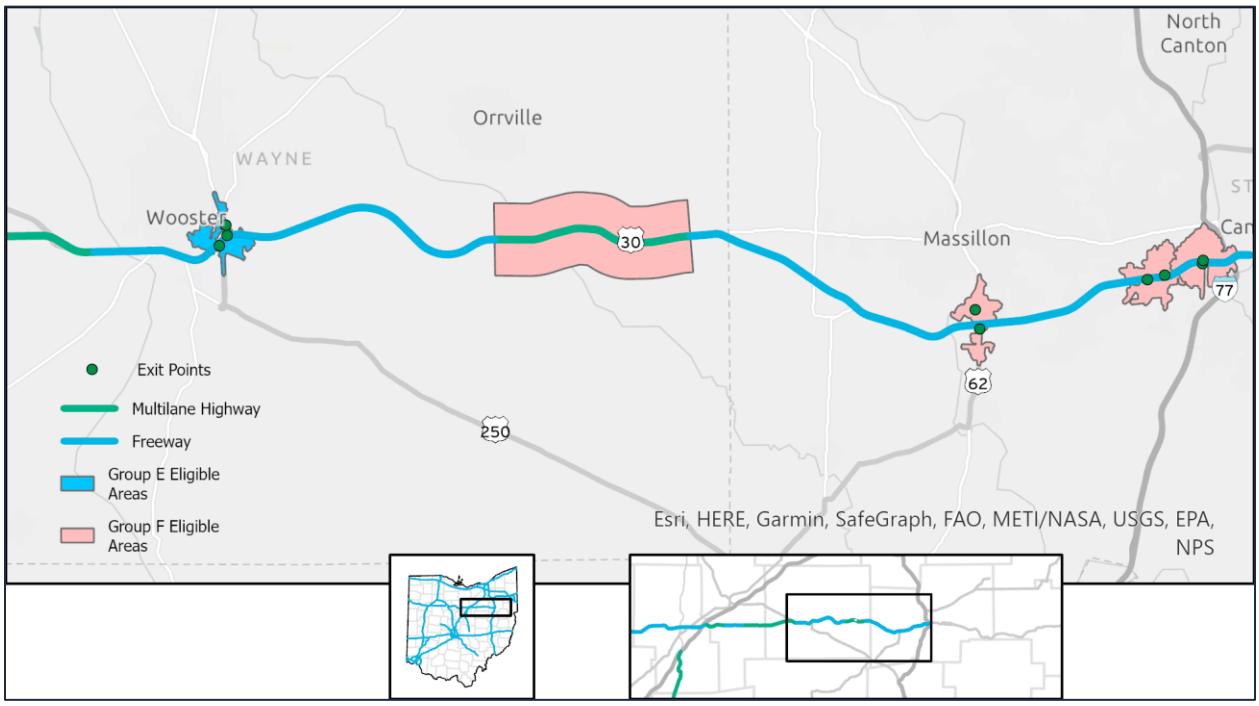

Figure 23: Comparison of Polygons along US-30
Source: DriveOhio

With the sites determined, the polygons were then grouped to ensure that one charger could be procured for each group, and that there would be at least one charger every 50 miles. A summary of these "groups" and the total number of "location" options within these groups can be seen in **Table 24**.

Table 24: US and State Route AFC Eligible Groups

AFC	# of Groups	# of Freeway Locations
SR-13	1	0
SR-15	1	1
US-23	3	3
US-30	6*	11*
US-33	5	12
Total	16	27

*I-75 at US-30 may be selected in NEVI Procurement Phase I. If so, it will serve both AFCs.

Source: DriveOhio

Error! Reference source not found. shows existing NEVI-compliant DCFCs, the coverage area for the one NEVI-compliant charger that covers a US/State Route AFC (SR-13) and breaks down the US/State Route AFCs by access type. It also shows the US and State Route groups.

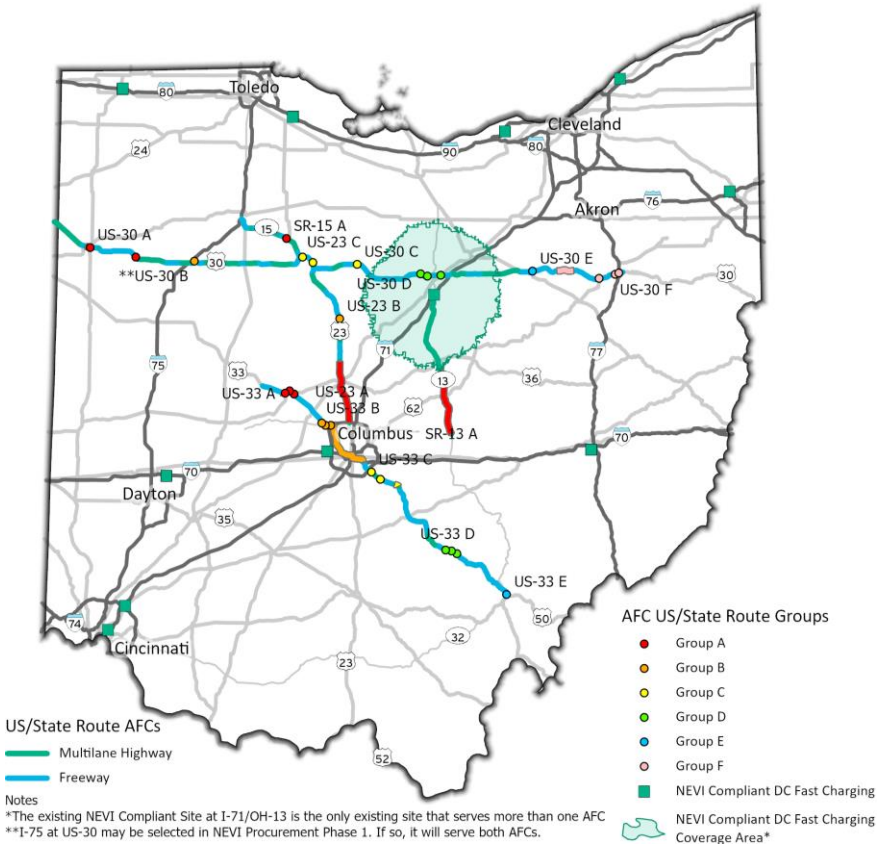

Figure 24: Statewide Map of US and State Route AFCs
Source: DriveOhio

7.4 State, Regional, and Local Policy

To deliver the recommendations in this Plan and continue progress towards supporting ODOT's NEVI goals, ODOT plans to continue coordinating around state, regional, and local policy with various stakeholders defined in **Chapter 2**. ODOT plans to perform the following activities listed in the state column in **Table 25** and work with the MPOs/RTPOs so they can work with their member agencies on the following items:

Table 25: ODOT Planned Charging Activities

State	MPO/RTPOs	County/City
Plan EV corridor charging: gap identification, power supply analyses, priority locations for private sites.	Identify gaps in regional DCFC charging network, based on shared mobility services and fleets.	Develop community-based EV charging plan addressing multi-unit dwelling, workplaces, public and fleet charging.
Ensure NEVI funded partners identify and provide necessary levels of non-federal matching funds for Ohio's NEVI Formula Program.	Help identify private or government site hosts to fill DCFC gaps.	Identify priority locations (government, private); set goals for development.
Maintain and publicize to Ohio agencies EV chargers that are on the states universal term contract list.	Identify additional L2 locations based on traffic flows and site characteristics.	Enact local policies such as "right to charge," "make ready" building codes for new builds and renovations, charging facilities in rights of way, others.
Draft EV charging policies such as state building code for parking garages to facilitate minimum % of "make ready" wiring.	Facilitate project partnerships with utilities, charger providers and installers to develop facilities.	
Develop template for local EV charging planning.	Consider establishing EV charging incentives.	
Develop sample standard EVSE plan sheets and specifications.		

Source: DriveOhio

In addition to the activities above, ODOT and its DriveOhio team are committed to continuing to:

- Socialize this Plan with other state agencies, adjacent states, MPOs, utilities and other key stakeholders.
- Conduct outreach to highest priority sites, identify site hosts interested in applying for funding, and publicize NEVI and other EVSE funding opportunities.
- ODOT will try to establish a point of contact at each investor-owned utility and Ohio's Electric Cooperatives and facilitate more detailed conversations between these organizations and the site hosts to ensure the cost of providing power and the rates are not prohibitive and the process can move forward efficiently.
- Continue to update this Plan including further development and refining of more detailed cost models and schedules based on ownership decisions.
- Facilitate efforts noted in **Table 25** to help Ohio agencies target the most impactful EV readiness activities. The state can further develop this framework to support their constituents.

Chapter 8 Implementation

As described in **Chapter 5**, ODOT's implementation complies with all federal and state legal provisions, and to achieve the state's NEVI Plan goals, ODOT developed a competitive procurement program to award and disburse NEVI Formula funds. To effectively manage such a procurement program, ODOT is performing and will continue to perform the activities shown in **Table 26** for each year of the NEVI program

Table 26: Program Management Activities

Activity	Description
Ohio NEVI Competitive Procurements	Create and issue Requests for Proposals (RFP) for third party (non-state) applicants interested in receiving NEVI funding to install, own, and operate NEVI compliant EVSE in Ohio.
Contracting with Awarded Parties	Develop a detailed contract for third parties awarded NEVI funding, flowing down federal and state legal terms and conditions to the final EVSE site owner-operators awarded NEVI funds.
Program Management	Establish a robust NEVI Management Program at ODOT to ensure third parties awarded NEVI Formula funds are meeting federal and state compliance requirements and achieving the state and federal goals of the NEVI program.

Source: DriveOhio

As detailed in activity two above, ODOT's contracts for the third parties awarded NEVI funding will be designed to flow down both federal and state legal terms and conditions to the final EVSE site owners and operators awarded NEVI Formula funds. These terms and conditions will include terms for operations and maintenance; obligations for station owners; financial match requirements; data collection processes; strategies to address seasonal, resiliency, and emergency needs; and strategies to promote strong labor, safety, training, and installation standards.

8.1 EVSE Operations & Maintenance

ODOT's RFP, Awards, and Contracts with Third Parties for NEVI Formula funds will seek to ensure the standards shown in **Table 27** for NEVI funded EVSE operations and maintenance are met.

Table 27: Operations and Maintenance Standards

Activity	Description
Continuous Operation	Charging stations must support continuous operations even when network connectivity is not available or consumer cell phone service is not available (i.e., "default on" with loss of network).
Accept New Users	Charging stations must be accessible to "walk up" consumers. This means that consumers must be able to initiate a charge session without a prior membership or network interaction in a simple process.
Accessibility	To report outages, malfunctions, and other issues with charging infrastructure, charging stations and network systems must provide 24/7 customer service mechanisms such as online service or phone line support.
Uptime	Any operating network system must be capable of network uptime of greater than 97%.
Networked	Any operating network system must proactively monitor charging stations for maintenance needs and notify/dispatch for corrective action as issues are identified.
Performance	Chargers must be capable of operating without any decrease in performance over an ambient temperature range of minus 22 to 122 degrees Fahrenheit with a relative humidity of up to 90%.

Source: DriveOhio

8.2 Identifying EV Charger Service Providers and Station Owners

To help identify EV charger service providers and station owners, the Ohio EPA provided data to ODOT on the parties that bid on their DCFC Volkswagen (VW) Mitigation Grant funding opportunity

so they could be informed of the NEVI opportunity. The Ohio DAS also currently has pre-bid EVSE available for purchase through the state term contract: https://ohiobuys.ohio.gov/page.aspx/en/ctr/contract_manage_public/8243.

8.3 EVSE Data Collection & Sharing

ODOT's RFPs, Awards, and Contracts with Third Parties for NEVI Formula funds will seek to ensure the standards shown in **Table 28** for NEVI funded EVSE data collection and sharing are met.

Table 28: Data Collection and Sharing Standards

Activity	Description
Open Network (OCPP)	Charging stations must be capable of utilizing Open Charge Point Protocol (OCPP) V1.6J or higher for communications to various network back-ends (i.e., the system must be able to "default" to OCPP for basic functionality). By February 28, 2024, chargers must conform to OCPP 2.0.1.
Network Interoperability	Charging stations must be connected to an operating network that must have the ability to switch between OCPP networks. By February 28, 2024, charging networks must be capable of communicating with other charging networks in accordance with Open Charge Point Interface (OCPI) 2.2.1. Chargers must be designed to securely switch charging network providers without any changes to hardware.
	Charger-to-EV Communication. Chargers must conform to ISO 15118-3 and must have hardware capable of implementing both ISO 15118-2 and ISO 15118-20. Charger software must conform to ISO 15118-2 and be capable of Plug and Charge by February 28, 2024. Conformance testing for charger software and hardware should follow ISO 15118-4 and ISO 15118-5, respectively.
Roaming Enabled	Any operating network system for a charging station must follow network "roaming" best practices established by the Open Charge Point Interface (OCPI) protocol.
Open to New Users	Point of sale and supporting network use of an open protocol to allow subscribers of other EV charging networks to access the charging station.
Multiple Pay Options	Multiple payment options for drivers such as pay-per-use and subscription methods, and the ability to accept credit and debit cards.
Transparent Pricing	Clear, simple, and real-time pricing and fee information displayed on device, payment screen and physical signage that meets the requirements of is O.A.C. 901:6-5-02(H).
Payment Security	All pay equipment must possess the capabilities to ensure credit card transactions are compliant with the latest PCI and PA-DSS standards. Chargers and charging networks should be compliant with appropriate Payment Card Industry Data Security Standards (PCI DSS) for the processing, transmission, and storage of cardholder data. Charging Station Operators must also take reasonable measures to safeguard consumer data.
Cybersecurity	The awardee must use commercially reasonable Cybersecurity standards to protect sensitive and/or confidential data both in transit and at rest, as detailed further in **Chapter 12**.
Privacy	All data shared with ODOT must be de-identified to remove personally identifiable user data and payment card industry data.
Data Format	Data shall be provided in a machine-readable format that can be readily ingested by ODOT. Acceptable formats include .JSON, .XML or similar format with ODOT approval.
Secure Transfer	Data shall be transmitted to ODOT via an agreed upon secure communication mechanism.
Data Timeline	Data will be required to be shared for a period of at least 5 complete calendar years after the charging starts accepting public use.

Source: DriveOhio

In addition to the above standards, ODOT intends to require NEVI funded EVSE owners to provide data based on ODOT's need to monitor and evaluate the program and to fulfill the Final NEVI Standards and Requirements. The contract for NEVI funding will require the data elements be shared in accordance with the specified frequency and grouping as described below.

8.3.1 Near Real-Time Data Requirements

To support ODOT's performance monitoring and measurement, the NEVI Developer shall provide the following data in near real-time. Near real-time should be considered no more than an hour lag.

- EVSE location identifier
- Number of charging events
- Number of unique users
- Charging session start time/end time
- Successful session completion by port (yes/no)
- Energy (kWh) dispensed to EVs per session by port
- Peak session power (kW) by port
- Price customer paid (itemized, including power, tax, and other fees)
- Average charging event time
- Average charging event power (kW and kWh)
- Charger operational (yes/no)

8.3.2 Quarterly Data Requirements

To be compliant with the reporting requirements of the Final NEVI Standards and Requirements, the NEVI Developer shall provide a quarterly report in a form to be approved by ODOT that includes the following:

- Charging station identifier
- Charging port identifier
- Number of charging events
- Number of unique users
- Charging session start time / end time
- Successful session completion (yes/no) by port
- Error codes associated with unsuccessful charging sessions by port
- Energy (kWh) dispensed to EVs per session by port
- Peak session power (kW) by port
- Price customer paid (itemized, including power, tax, and other fees)
- Payment method associated with each charging session
- Charging station port uptime for each of the previous three months
- Duration in minutes for each outage
- Average charging event time
- Average charging event power (kW and kWh)
- Cost of electricity to operate per charging station in each of the previous three months
- Maintenance and repair cost per charging station for each of the previous three months
- Charging station real property acquisition cost, charging equipment acquisition and installation cost, distributed energy resource acquisition and installation cost, and grid connection and upgrade cost on the utility side of the electric meter
- Distributed energy resource installed capacity, in kW or kWh as appropriate, of asset by type (e.g., stationary battery, solar, etc.) per charging station.

8.3.3 Annual Data Requirements

Beginning in 2024, an annual data report must be submitted on or before March 1st for the NEVI Developer to meet the Final NEVI Standards and Requirements. The annual data report shall contain the following data:

- EVSE location identifier
- Address/GPS of charger location
- Name, address, and phone number of NEVI Developer
- Date of installation
- Number of ports and connector type
- Number of accessible ports
- Maximum kWh per port
- Vehicle size accessibility (physical dimensions of the largest vehicle that can access a charging port at the charging station)
- Price/rate structure
- Accepted forms of payment
- Network provider
- Power sharing enabled (yes/no)
- Maintenance and repair costs per charging station for the previous year;
- Identification of and participation in any state or local business opportunity certification programs including but not limited to minority-owned businesses, Veteran-owned businesses, woman- owned businesses, and businesses owned by economically disadvantaged individuals
- Charging station port uptime for the previous twelve months

8.3.4 Third Party Data Sharing Requirements

Pursuant to the Final NEVI Standards and Requirements, the following data fields are to be made available, free of charge, to third party software developers, via API:

- Charging station identifier
- Address (street, city, state and zip code) of the property where the charging station is located;
- Geographic coordinates in decimal degrees of exact charging station;
- Charging station operator name;
- Charging station phone number;
- Charging network provider name
- Charging station status (operational, under construction, planned or decommissioned);
- Number of charging ports
- Unique port identifier;
- Connector types available at each charging port;
- Charging level by port (DCFC, AC Level 2, etc.)
- Power delivery rating in kW by port;
- Number of ports with pull-through capabilities (vehicle with trailer);
- Maximum power level of each charging port;

- Power sharing by port (i.e., whether power sharing between EVSEs is enabled);
- Date when charging station first became available for use;
- Pricing structure;
- Payment methods accepted;
- Number of charging ports accessible to users with disabilities;
- Real-time status of each charging port in terms defined by Open Charge Point Interface 2.2.1; and
- Real-time price to charge at each charging port, in terms defined by Open Charge Point Interface 2.2.1.

8.3.5 One-Time Data Requirements

Beginning in 2024, pursuant to the Final NEVI Standards and Requirements, the following data must be collected and submitted once for each charging station on or before March 1st of each year:

- Name and address of private entities involved in the operation and maintenance of chargers
- Distributed energy resource installed capacity, in kW or kWh as appropriate, of asset by type per charging station
- Charging station real property acquisition cost
- Charging equipment acquisition and installation costs
- Distributed energy resource acquisition and installation costs
- Aggregate grid connection and utility upgrades separated into 1) total distribution and system costs, and 2) total service costs

8.4 Resilience, Emergency Evacuation, Snow Removal/Seasonal Needs

ODOT's RFP, Awards, and Contracts with Third Parties for NEVI Formula funds will seek to ensure the standards shown in **Table 29** for NEVI funded EVSE resilience, emergency evacuation, and snow removal are met.

Table 29: Resilience, Emergency Evacuation and Snow Removal Standards

Category	Standard
Resilience	ODOT is considering the addition of potential scoring criteria that would provide additional prioritization for EVSE owner-operators who add resilience technology to their EVSE sites such as battery storage, backup power generation, or renewable power generation such as solar.
Emergency Evacuation	As an inland, midwestern state, Ohio is not subject to routine weather-related needs for emergency evacuation such as hurricanes or large-scale seasonal floods. However, the Emergency Operations section of ODOT manages and coordinates ODOT's statewide response to disasters both natural and human made. ODOT directly coordinates with Ohio EMA and is the lead for all emergency support functions related to transportation issues. ODOT is one component in the State Emergency Operations Plan that requires a multi-agency all hazards response to emergencies with emphasis on public safety and keeping our roadways open for traffic. The Interstates and AFCs in this NEVI plan are all part of Ohio's emergency evacuation routes and building EVSE on these will facilitate EV travel in the event of any emergency or disaster whether natural or human made.
Seasonal Needs	While Ohio can experience seasonally severe weather, the most routine seasonal impact to EVSE will be snowfall and the need for EVSE to be kept clear and accessible during snow events. ODOT will seek to require NEVI funded EVSE stations to maintain minimum uptime and accessibility standards.

Source: ODOT

8.5 Labor, Safety, Training, and Installation Standards

ODOT's RFP, Awards, and Contracts with Third Parties for NEVI Formula funds will seek to ensure the standards shown in **Table 30** for strong labor, safety, training, and installation standards are met.

Table 30: Labor, Safety, Training, and Installation Standards

Category	Standard
DBE & Small Business	ODOT understands it is the policy of the Federal Highway Administration (23 CFR 230.107) to require: that all Federal-aid highway construction contracts include specific equal employment opportunity requirements. To support this goal, ODOT runs the Equal Employment Opportunity and On-The-Job Training programs. ODOT will reference its best practices in its EEO and OJT programs to increase opportunities for diverse groups to participate in these NEVI projects.
Prevailing Wage	Prevailing wage laws will be relevant in procurement if labor is part of the contract. ODOT uses Proposal Note #61 to document the contractual requirement for contractors working on Title 23 construction projects to be responsible for paying prevailing wage and ODOT will require Proposal Note #61 to be included in all agreements for NEVI funded EVSE.
EVSE Specific Training	ODOT will encourage electricians to upskill further through the EVITP accreditation and is working with Ohio TechCred to enable training reimbursements for electricians who take EVITP.
Certified Electricians	Charging Station installation must be performed in a professional manner in accordance with industry standard best practices and with all state and local government laws and ordinances.
Site Safety Requirements	Charging station installation must include protection from damage to ground and wall-mounted equipment, including protection from vehicle collision (guard posts, wheel stops, curb protection, or wall-mounted barriers).
Hardware Safety Standards	Charging stations must meet relevant technical and / or safety standards, including but not limited to UL 2202, and Code of Federal Regulations, Title 47, Part 15 (47 CFR 15), and must have valid certification(s) from a Nationally Recognized Testing Laboratory (NRTL).
Electrical Enclosure Safety	Charger enclosures must be constructed for use outdoors in accordance with UL 50E Standard for Safety for Enclosures for Electrical Equipment, Environmental Considerations, Type 3R exterior enclosure or greater.
Cord Management	Chargers must incorporate a cord management system or method to eliminate potential for cable entanglement, user injury, or connector damage from lying on the ground.
ADA Compliance	Chargers must be ADA compliant. See Design Recommendations for Accessible Electric Vehicle Charging Stations (access-board.gov)
Fire Department and Public Safety Training	A significant amount of information related to safety training for EVs is provided by the National Fire Protection Association (NFPA).[7] The NFPA is also working to deliver a report due in October 2023 to provide updated training programs and code compliance readiness for EVs. Other than the NFPA, the SAE J2990 document (Hybrid and EV First and Second Responder Recommended Practice, July 2019) provides training and information they must have on hand on when dealing with an electric vehicle thermal event.[8]

Source: DriveOhio

[7] https://www.nfpa.org/EV

[8] https://www.nfpa.org/Training-and-Events/By-topic/Alternative-Fuel-Vehicle-Safety-Training/Emergency-Response-Guides.

Chapter 9 Civil Rights

The State of Ohio and ODOT value and uphold the civil rights laws of Ohio and the United States. These laws and accompanying requirements have long been incorporated into ODOT's existing procurement process and will be complied with for all NEVI purposes (also understanding additional contractual requirements from US DOT may be included). **Table 31** outlines the state and Federal civil rights laws to which ODOT and their contract recipients will comply.

Table 31: State and Federal Civil Rights Laws

Governance	Description
Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d-1) and 49 CFR part 21	Title VI of the Civil Rights Act of 1964 was created to prohibit discrimination based on race, color or national origin in programs and activities that are Federally funded. ODOT will append Form FHWA 1273 to all contracts and require the same for all subcontracts that access federal funds.
23 CFR part 230	This code section requires equal opportunity requirements be included in Federal and Federal-aid highway construction contracts including supportive services. Where applicable, ODOT will comply with this requirement.
23 CFR part 633.102-104	This code section requires language from Form FHWA-1273 be included in all Federal-aid construction contracts (other than Appalachian construction contracts). This form's language encompasses, among other things, prohibitions on all class discrimination. Where applicable, ODOT will comply with this requirement.
49 CFR part 26 (DBE Program)	23 CFR Section 635.107 directs that state DOTs must comply with 49 CFR part 26 which are the federal DBE regulations. NEVI projects will have a DBE goal associated with them, unless it is deemed that the work is so specialized or limited that there are not ready, willing, and able DBEs in the region that could be available to meet a goal. ODOT will consider whether a reasonable analysis of potential DBEs needs to be made so reasonable goals can be set or shared with potential NEVI project partners.
Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) and 49 CFR parts 27, 37, and 38 and Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794).	According to the FHWA's website: "The Americans with Disabilities Act *** prohibits discrimination against individuals with disabilities in all areas of public life *** prohibits disability discrimination by State and local government entities [in] public rights-of-way. *** US DOT is charged with ensuring compliance relating to transportation. The FHWA Office of Civil Rights oversees compliance with DOT requirements for highways, streets, and traffic management." Ohio's NEVI projects will have ADA review and compliance requirements. The requirements around these sections will be passed through to the contracting entities for compliance.
ORC 4112 Civil Rights Commission and Ohio Administrative Code 4112 Ohio Civil Rights Commission	While Ohio passed the Ohio Civil Rights Act of 1959, the Act only consisted of non-discrimination in employment matters. These code sections create the Ohio Civil Rights Commission and their authority to enforce Ohio and Federal laws against discrimination.

Source: As noted.

Given the expected length of the contracts for the NEVI projects, ODOT's contracts will provide for routine check-ins to support compliance evaluation and verification. ODOT's internal Office of Civil Rights Compliance will assist the project team in all aspects of compliance with Civil Rights for this project.[9]

[9] https://www.transportation.ohio.gov/programs/civil-rights-compliance#page=1

Chapter 10 Equity Considerations

NEVI Formula Program funds will be developed through engagement with rural, underserved, and disadvantaged communities in support of the Justice40 Initiative as a part of Executive Order 14008, which has a goal of delivering 40 percent of the benefits of federal investments in climate and clean energy to disadvantaged communities. ODOT has reviewed available US DOT and US DOE definitions of disadvantaged communities and understands that the relevant agency definitions, methods, and tools for identifying these communities, as well as for determining the calculation of benefits, are continuing to evolve with future expected guidance.

Also of note, with Ohio's manufacturing history, the Governor's Office of Workforce Transformation (OWT) has been focused on future-proofing Ohio's economy in this ever-changing global economy. The OWT's focus on micro-credentialing and incumbent workforce upskilling, positions Ohio well to utilize this program to facilitate the NEVI workforce equity goals – as discussed later in this section as well as in the **Chapter 11** discussion on workforce.

Given this, ODOT submits the following preliminary analysis, considerations, and approach for meeting the NEVI Formula Funding goals and Ohio transportation electrification equity needs.

10.1 Identification and Outreach to Disadvantaged Communities in the State

ODOT runs a robust Public Involvement (PI) process across numerous projects on a routine basis. ODOT's PI process is designed to go beyond simply meeting legal requirements. ODOT staff take seriously the job of involving community members in transportation decisions that can have a deep and lasting impact on their lives. Through a collaborative effort among stakeholders, the public, coordinating agencies, transportation officials, and other interested parties, ODOT strives to create equitable outcomes that benefit communities across the State.

As described in **Chapter 3** above, ODOT seeks the inclusion of diverse viewpoints to ensure the needs and preferences of communities are considered. Engaging key stakeholders and community members from the beginning is important to ODOT as it enables transportation officials to make informed decisions based on multiple viewpoints. NEVI, like all transportation projects, requires early and continual PI opportunities during project planning and development in accordance with existing laws and regulations. ODOT's main goals with Public Involvement include:

- Understanding potential benefits and meeting local community goals
- Designing projects to enhance community cohesion
- Establishing community-based partnerships
- Avoiding disproportionately high and adverse impacts
- Minimizing impacts through early identification

ODOT recognizes that Ohio is home to a diverse population of urban, suburban, and rural communities comprising a wide variety of socio-economic, ethnic, and other demographic categories as briefly summarized in **Table 32**.

Table 32: Demographic Indicators in Ohio

Key Indicator	Value
Population	11,756,058
Percent of Overall Population in Poverty	13.4%
Percent of Black / African American Population	13.2%
Persons 65+	17.8%
Owner-Occupied Housing Rate	66.6%
Mean Travel Time to Work	23.7 min.

Source: https://www.census.gov/quickfacts/fact/table/OH

The public engagement efforts described in **Chapter 3** include organizations representing DACs, such as MPOs and transportation agencies, to ensure DAC perspective is reflected throughout Plan development. Building upon that foundation, ODOT has also begun a comprehensive public engagement process that specifically seeks to identify and engage both community-based organizations and community residents in rural, underserved, and disadvantaged areas. **Table 33** summarizes the equity focused outreach performed to date and previously presented in **Chapter 3** within **Table 6** and **Table 7**. ODOT sees this as the beginning of the process and will seek to continue to engage additional equity stakeholders throughout the five-year NEVI Formula program.

Table 33: Equity Public Engagement Activities to Date

Type	Relevance for NEVI Planning	Meeting Topics and Discussion Questions	Meetings/Dates	Key Messages
Transportation Agencies	Connect public transit systems to overall state electrification plan to ensure equity and access for citizens who rely on public transit	How can ODOT align the NEVI Plan with transit Electrification plans? Park & rides? And mobility priorities? Do transits want to participate in equity-based planning and engagement?	May through end of July 2022	Continue dialogue to identify future program synergies.
Power a Clean Future Ohio / Ohio Climate and Clean Energy Coalition	Coalition of Ohio Environmental Orgs (Sierra Club, NRDC, OEC, etc.) and Local Govts. that have carbon reduction plans	Environmental Organizations are on the FHWA list of recommended public engagement audiences, and this would be an opportunity to address the main groups at once.	June 13, 2022 June 15, 2022 June 22, 2022 June 29, 2022	Although proposed chargers are not in their jurisdiction for initial phases municipal power providers are interested in additional engagement.
Urban Community Resident **Listening Sessions**	1. Cleveland 2. Columbus 3. Cincinnati 4. Dayton	With MPOs as partners, local groups are identified and invited to join these listening sessions.	July 2022, June 2023	Most urban areas have existing NEVI compliant charger coverage, so there are less proposed chargers in these areas. Some cities have asked for their areas to be prioritized - emphasizing the importance of addressing urban equity factors.

Type	Relevance for NEVI Planning	Meeting Topics and Discussion Questions	Meetings/Dates	Key Messages
Rural Community Resident **Listening Sessions**	1. Rural Ohio 2. Appalachia	How can sites be "right sized" for charging based on utility power availability? EV adoption? EVSE Demand? Etc.?	July 2022, June 2023	Ensure locations, quantity, and power generation are designed to meet rural specific needs. Also, US-50 is an important route from the Athens area to Cincinnati and EV charging coverage is recommended.
OSU Rapid Innovation for Public Impact **Challenge**	Identify and address equity challenges that could impact the Ohio NEVI program	OSU students were placed into interdisciplinary teams in order to develop a minimum viable solution to address EV equity challenges.	**Spring of 2022**	Ensure that the NEVI deployment is fair and equitable

Source: DriveOhio

In addition to these preliminary engagements, ODOT has reviewed the following tools provided by the US DOE, US DOT, and Joint Office to understand the capabilities and focus of each. This review was helpful in informing additional analysis summarized in the next section.

Table 34: US Agency Equity Tools Reviewed

Tool Name	Description
Climate and Economic Justice Screening Tool (CEJST)	US DOT tool to help Federal agencies identify disadvantaged communities (DACs) that are marginalized, underserved, and overburdened by pollution as part of the Justice40 Initiative
US DOT Equitable Transportation Community Explorer (ETC)	US DOT tool to explore the cumulative burden communities experience, as a result of underinvestment in transportation

Source: DriveOhio

10.2 Process to Identify, Quantify and Measure Benefits to DACs

ODOT reviewed the equity tools provided by the US DOE, US DOT, and Joint Office to further identify designated DACs as well as reviewed the tool methodologies and additional resources on how to assess the calculation of benefits derived to communities through Ohio's deployment of NEVI funded EVSE in the state. Through this review and PI efforts, ODOT has developed the three-step process shown in **Figure 25** to identify, quantify, and measure benefits to DACs.

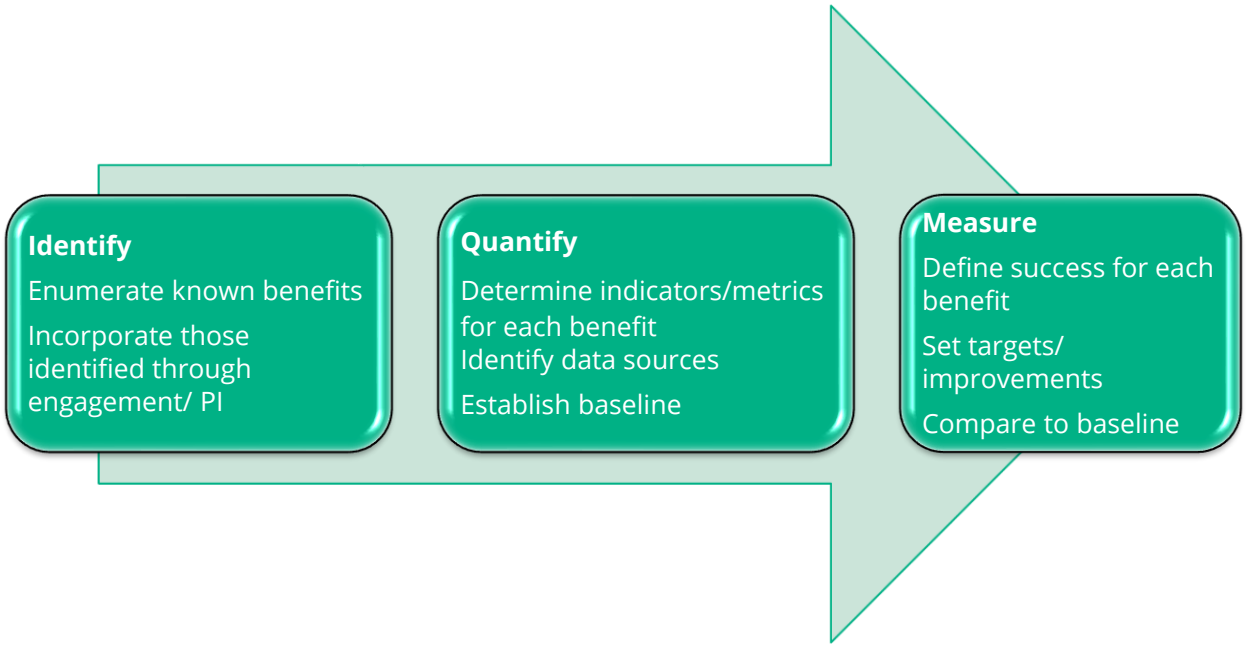

Figure 25: Benefit Identification and Measurement Process
Source: DriveOhio

According to the CEJST Tool, 22.12% of Ohio's land area is located within a DAC. These census tracts are shown in **Figure 26**. However, this analysis paints an incomplete picture of equity concerns in Ohio. In addition to the CEJST tool, ODOT mapped several individual equity indicators to get a better

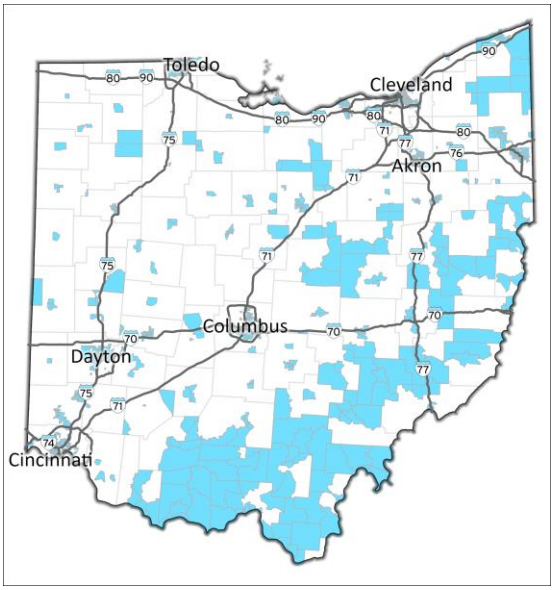

Figure 26: CEJST DACs
Source: Climate and Economic Justice Screening Tool, https://screeningtool.geoplatform.gov/en/#3/33.47/-97.5

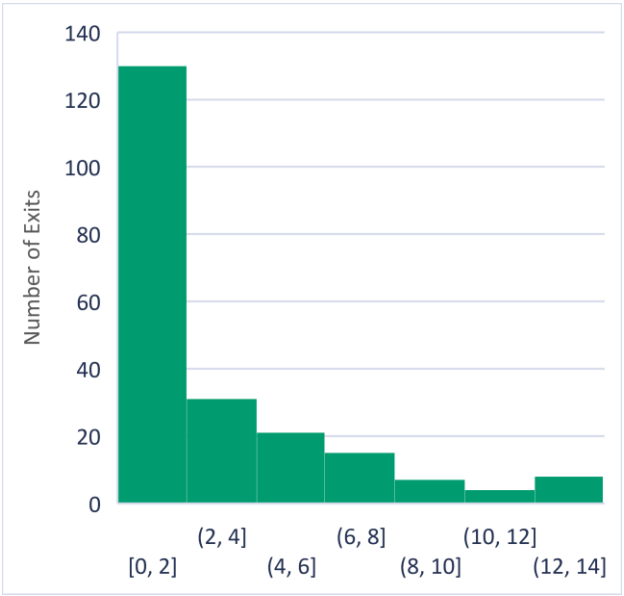

Figure 27: Distance (miles) to Nearest Equity Census Tract
Source: DriveOhio

understanding of their location and potential impact on the NEVI Program. **Figure 28** visualizes the parts of Ohio with high poverty, high minority populations, and census tracts with a population at least one standard deviation above Ohio's average, which is slightly above the national average. Together these represent 21.5% of Ohio.

Anecdotally in Ohio, there are many people wanting to visit family members or friends in rural locations with their EV and being worried about having somewhere to charge during the trip. **Figure 27** describes the distance from the center of each possible exit identified in **Chapter 7.2** to the nearest Equity Census Tract depicted in **Figure 28**, indicating that the majority of these exits where chargers are proposed are within 2.5 miles of a DAC.

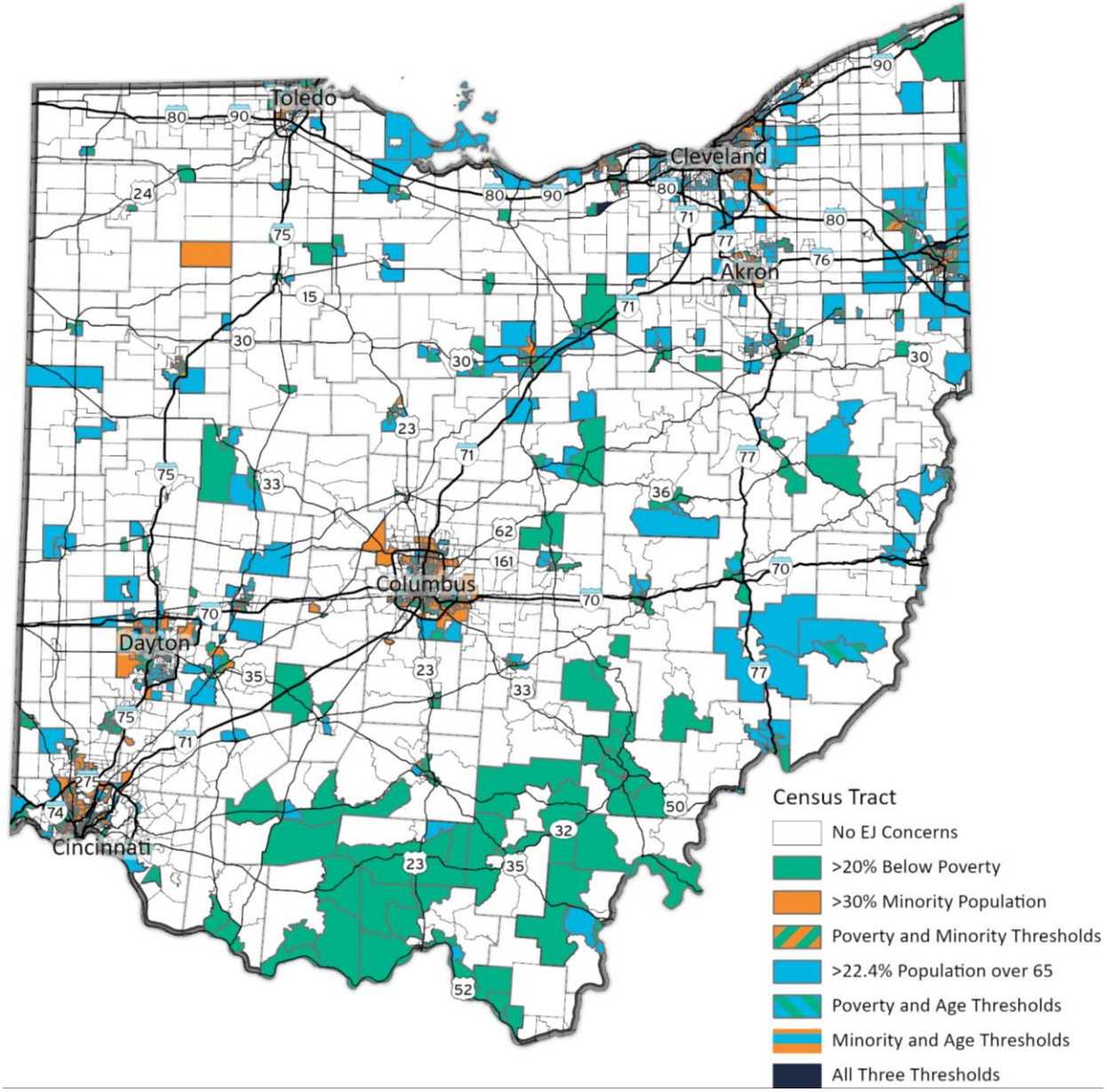

Figure 28: Equity Census Tracts in Ohio
Source: DriveOhio

Additionally, ODOT recognizes that one of the shortcomings of the CEJST tool is the lack of consideration of cumulative burden. The resulting implication is that all DACs, from those with relatively less disadvantage and those with relatively more disadvantage are all treated the same, which disproportionately impacts Black communities in particular, according to the analysis from the [World Resources Institute (WRI).]

Figure 29 shows how CEJST burdens add up, based on the 8 categories of burden used in the CEJST mapping tool: climate change, energy, health, housing, legacy pollution, water and wastewater, workforce development.

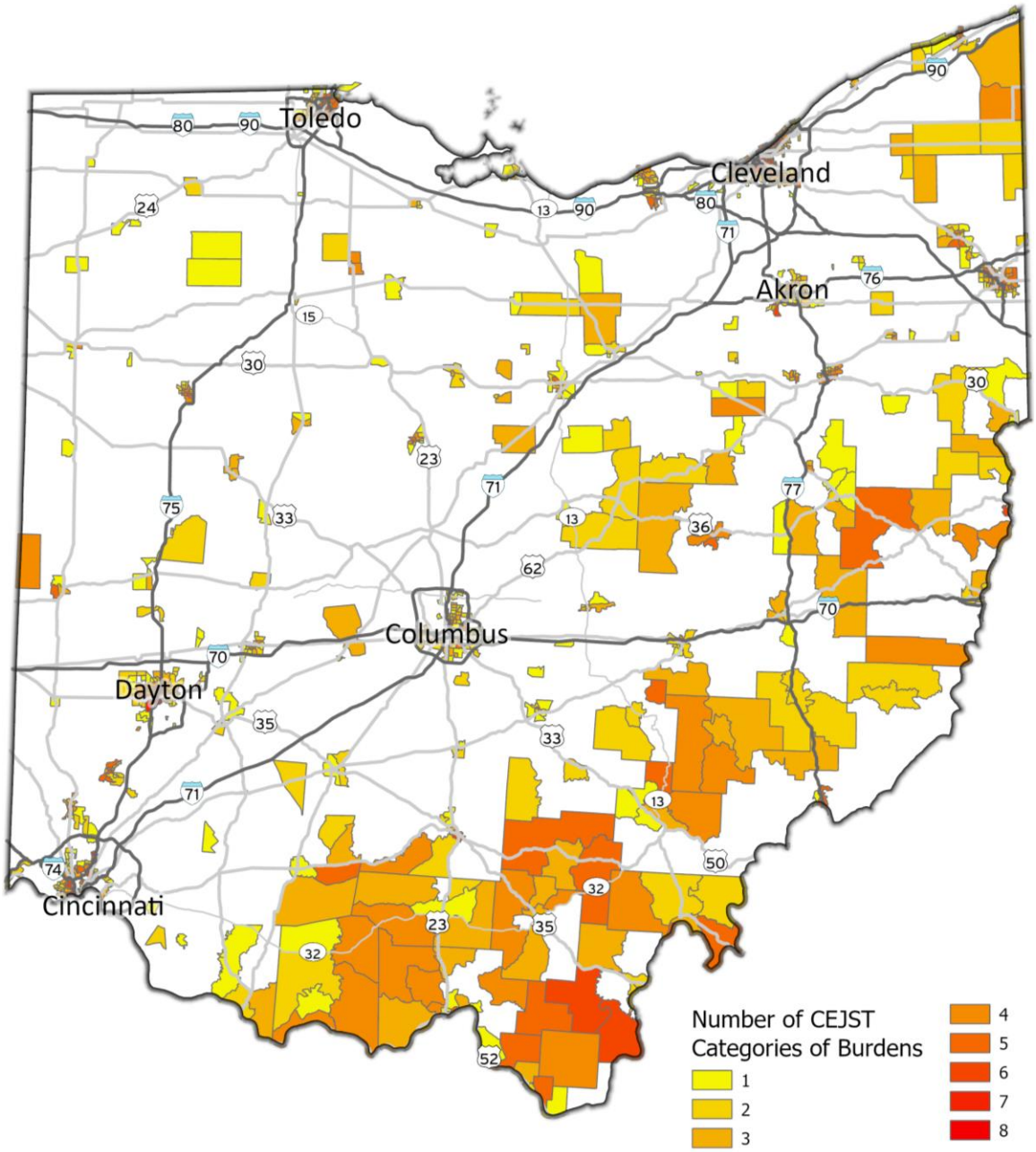

Figure 29: CEJST Burdened Census Tracts in Ohio
Source: Climate and Economic Justice Screening Tool, https://screeningtool.geoplatform.gov/en/#3/33.47/-97.5

ODOT is also monitoring the various tools provided by the U.S. DOT. The latest Equitable Transportation Community (ETC) Explorer, shown in **Figure 30,** is an interactive web application that uses 2020 Census tracts and data, to explore the cumulative burden communities experience, as a result of underinvestment in transportation, in the following five components: transportation insecurity, climate and disaster risk burden, environmental burden, health vulnerability, and social vulnerability. It is designed to complement the CEJST by providing users deeper insight into the transportation disadvantage component of CEJST, and the ETC Explorer's Transportation Insecurity component, which will help ensure the benefits of DOT's investments are addressing the transportation related causes of disadvantage.

ODOT recognizes that the ETC tool is still being updated, and that it is not a binary tool indicating whether a census tract is considered disadvantaged or not.

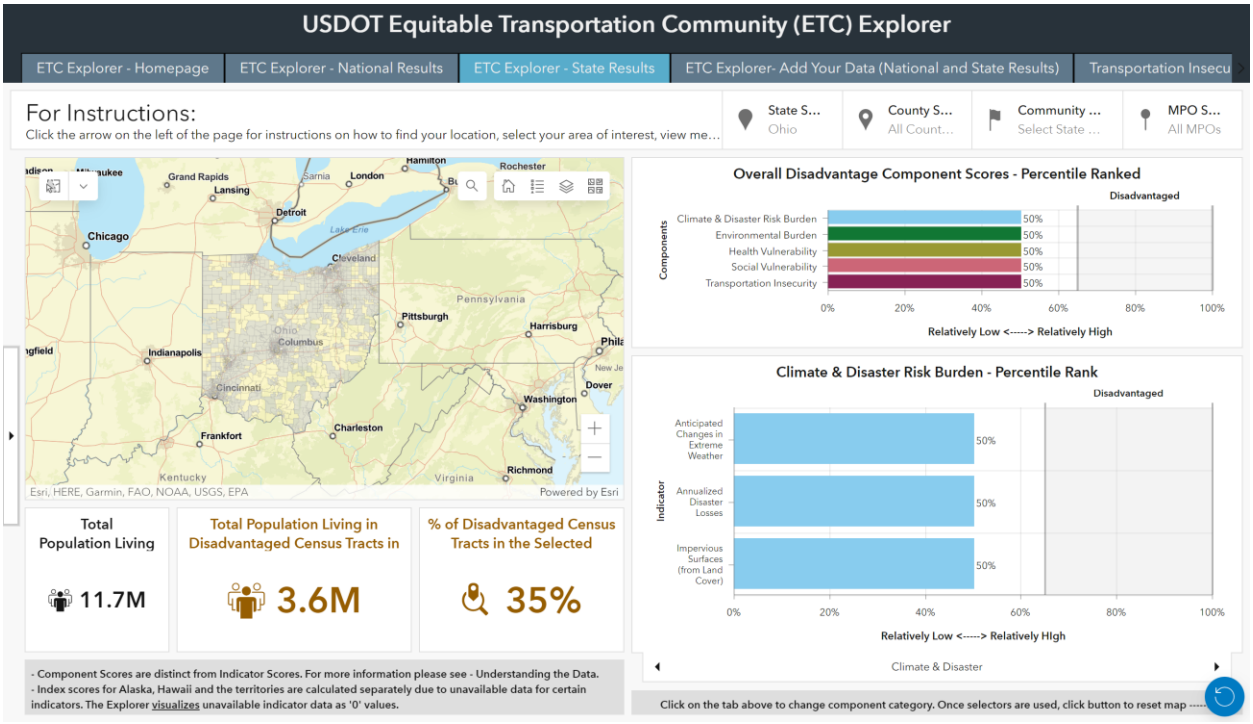

Figure 30: USDOT Equitable Transportation Community (ETC) Explorer
Source: USDOT ETC, https://experience.arcgis.com/experience/0920984aa80a4362b8778d779b090723/page/Applicant-Explorer/

10.3 Benefits to DACs through this Plan

ODOT understands that there are multiple methodologies to calculate and measure benefits to DACs in regard to the NEVI Formula Program funding. Considering this, ODOT has performed the following initial assessments of benefits:

- Assessment of percent of AFC miles running through the CEJST identified DACs in Ohio.
- Annual and Final percent of NEVI funded EVSE in federally designated DACs.
- Annual and Final percent of laborers employed by NEVI funded EVSE projects.

Percent of AFC Miles in DACs: While Ohio has 16 AFCs designated throughout the state, many of Ohio's DACs lie in communities not immediately adjacent to Ohio's portions of the federal Interstate

Highway System and FHWA designated AFCs. In fact, the percent of total AFC miles running through the CEJST Map designated DACs is only 7% of total miles as shown in **Table 35**.

Table 35: Ohio AFC Miles within a DAC

Route	Not in DAC		In DAC		Total Miles
	Miles	Percentage	Miles	Percentage	
I-270	44.01	80%	11.26	20%	55.27
I-275	41.82	81%	10.10	19%	51.92
I-675	25.33	100%	0.00	0%	25.33
I-680	15.55	94%	1.02	6%	16.57
I-70	211.46	94%	12.41	6%	223.87
I-71	236.33	96%	9.74	4%	246.07
I-74	11.01	57%	8.34	43%	19.34
I-75	204.38	95%	10.89	5%	215.26
I-76	74.44	92%	6.47	8%	80.92
I-77	142.04	88%	19.15	12%	161.19
I-80	233.63	99%	2.26	1%	235.89
I-90	94.76	94%	5.95	6%	100.71
SR-13	44.63	93%	3.14	7%	47.77
US-23	83.81	100%	0.00	0	83.81
US-30	175.41	94%	10.22	6%	185.63
US-33	97.74	83%	19.76	17%	117.51
Total	**1736.35**	**93%**	**130.71**	**7%**	**1867.06**

Source: DriveOhio

ODOT will seek to provide two additional assessments of DAC benefits on an annual and overall basis once final NEVI funds are awarded and sites are known.

Percent of NEVI EVSE in DACs: The first of these additional equity benefits assessments will be an annual and final calculation of the percent of NEVI funded EVSE sites along federally designated AFCs.

NEVI EVSE participation from rural, underserved, and disadvantaged residents: ODOT will seek to collaborate with partners in the Governor's Office of Workforce Transformation, JobsOhio, and Department of Administrative Services to develop basic reporting criteria for NEVI funded EVSE projects in Ohio to detail equity-based participation. ODOT will seek to utilize reporting requirements for NEVI funded partners to capture key information on the companies and employees who are ultimately funded to install and maintain NEVI EVSE and assess the percent of job-related benefits these employees derive from NEVI Formula funds. EV and EVSE workforce development programs focused on job training and certification are also key priorities for the state of Ohio and are discussed further in **Chapter 11**.

Chapter 11 Labor and Workforce Considerations

11.1 Vehicle Electrification | Opportunities and Challenges

EVs are forecasted to be a significant area of growth in the future of the private and commercial motor vehicle markets, and the Bipartisan Infrastructure Law's $5 billion in NEVI State Formula funds and additional $2.5B in competitive discretionary grants will only further boost the transportation sector's electrification transition. As a manufacturing state, Ohio has a competitive advantage to capitalize on these market trends, attract OEM investments, and create new job opportunities in the design, assembly, operations, and maintenance of EVs and EVSE.

The transition to EVs is not without its challenges. As EVs become more prevalent, the demand for professionals with unique skill sets is growing and producing demand for specialized training. The massive changes that the EV industry is undergoing will spotlight the need for workforce skills development to support EVs along with the infrastructure on which they depend. The U.S is facing a critical shortage of skilled trades workers, due to an aging workforce and limited awareness of opportunities in the trades. According to the National Electrical Contractors Association (NECA), 7,000 new electricians join the industry each year, but 10,000 retire from it, putting the number of skilled electricians available at a severe deficit.

While there are a wide variety of career pathways that will be directly and indirectly impacted by vehicle electrification, the following three job categories are especially critical within Ohio's workforce for the EV and EVSE talent ecosystem, as shown in **Table 36**.

Table 36: Workforce Considerations by Job Category

EV & EVSE Workforce	Description of Workforce Category and Key Considerations
EV Supply Equipment (EVSE) Installation & Upgrades	The continued adoption of EVs, and specifically the NEVI Formula program, will rely on the installation of accessible EVSE charging infrastructure. As new buildings and parking facilities are constructed, there is an opportunity to install EVSE or EVSE- ready electrical wiring. Installing EVSE provides an economic and workforce development opportunity for electricians and electrical workers. Because Ohio is home to the fifth most electricians in the United States, there is an even greater workforce development incentive here for the state. Through EVSE installation and maintenance, the electric trades will become newly integrated with the automotive sector, generating increased employment opportunities to support this transition, and requiring training new and upskilling existing workers. **As of 2022, Ohio is home to 24,770 electricians recognized by the Bureau of Labor Statistics.** Additionally, Electricians installing EVSE and personnel maintaining or repairing the EVSE electronics have varying skill sets. A workforce development focus is necessary for local Certified Electronic Technicians for EVSE troubleshooting and repair if EV charger components fail after acceptance.
EV Maintenance & Repair	Vehicle mechanics and service technicians will need knowledge of EV upkeep, maintenance, service components, and parts to support the transition to vehicle electrification. According to the most recent data from the Bureau of Labor statistics, about 73,300 openings for automotive service technicians and mechanics are projected each year, on average, over the next decade, which underscores the tremendous opportunity for workforce development in this area. Therefore, as EVs flood the commercial and consumer markets over the next decade and onward, automotive technicians will need training and continuing education in EV maintenance. Continuing education and technician training already occur in Ohio; there are post-secondary vocational programs, community colleges, online instructional resources, and automotive-specific institutes or programs that can supplement their current training and continuing education curricula with EV content. By doing this, Ohio's automotive technicians and mechanics will be prepared for the next generation of EVs.

EV & EVSE Workforce	Description of Workforce Category and Key Considerations
EV Supply Chain & Manufacturing	Over the next decade, 29 major global automakers are investing at least $300 billion into EVs. Ohio, a long-time leader in automotive manufacturing, is well-positioned to reap the benefits from EV technology and manufacturing. With existing automotive manufacturing and end-to-end supply-chain infrastructure in the state and Midwest region, Ohio has a competitive advantage and can spearhead the EV transition. Ohio is quickly building a strong domestic electrification industry, with recent investments in the state topping nearly $10 billion. The Honda and LG Energy Solution battery plant in Fayette County will create 2,200 new jobs. Ford's new EV manufacturing plant in Lorain County will add an additional 1,800, and SEMCORP's new manufacturing facility in Sidney will create nearly 1,200 jobs[10].

Source: DriveOhio

While there is overwhelming evidence that electrification is the future of the transportation sector, Ohio must be strategic in how it achieves both transportation electrification and related workforce development outcomes. With economic and workforce development as a priority, Ohio EV job creation and training are at the forefront of this advancement. Additionally, it is important to highlight that EVs represent a technological transition in the automotive industry. For this reason, there are numerous opportunities for economic and workforce development that build upon existing Ohio manufacturing infrastructure, technician maintenance, and methods of training. Ultimately, this means initial progress for transportation electrification is well-underway in Ohio and elsewhere, underscoring the urgency in taking expedient action to capitalize on this automotive transition and its labor and workforce opportunities.

The remainder of this chapter presents initiatives that can effectively address and mitigate workforce challenges in Ohio.

11.2 NEVI Formula Program | Certified Electricians

EV infrastructure projects primarily require work by electrical contractors and their employees who are electricians. Ohio requires licensing for electrical contractors who work on commercial projects, but does not require a licensed journeyman electrician to perform electrical work.[11] However, FHWA's February 28, 2023 Final Rule for NEVI minimum standards section 680.106 requires that "all electricians installing, operating, or maintaining EVSE must meet one of the following requirements:

- Certification from the EVITP.
- Graduation or a continuing education certificate from a registered apprenticeship program for electricians that includes charger-specific training and is developed as a part of a national guideline standard approved by the Department of Labor in consultation with the Department of Transportation.
- For projects requiring more than one electrician, at least one electrician must meet the requirements above, and at least one electrician must be enrolled in an electrical registered apprenticeship program."

[10] https://www.jobsohio.com/ohio-leads-in-electric-vehicles

[11] https://www.servicetitan.com/licensing/electrician/ohio

Ohio is looking to leverage the Electrical Industry Training Centers and International Brotherhood of Electrical Workers to prioritize training in EVSE installation to support ODOT's NEVI Plan. Ohio is working to bring additional EVSE certifications, and reimbursements for those certifications, to electricians through the NEVI recommended EVITP curriculum available nationally, leveraging the Ohio TechCred program available to employers of electrical contractors in Ohio, as described below.

11.3 EVITP Certifications | Additional EVSE Specific Training for Certified Electricians

The Electric Vehicle Infrastructure Training Program (EVITP) is a non-profit, national collaborative of Automakers, Utility Companies, EVSE (Charging) Manufacturers, Safety Professionals, Electrical Professionals, and Educators that delivers a comprehensive EV Training and Certification program for experienced electricians. EVITP has been recognized by the Department of Energy, referenced in the BIL and other industry references as a highly regarded EV training program for electricians.

The ability to verify experience and expertise through a nationally recognized EV training and certification program (EVITP)— which requires 8,000 hours of electrical field experience as a minimum requirement for program participation— ensures that consumers in all market segments are working with established, certified electricians. Electricians also gain important EV charging infrastructure and electrical technology skills through the EVITP, which has been deploying training throughout the U.S. and Canada since 2011 with over 6,000+ electricians certified.

An increase in the number of EVITP certified qualified electricians in Ohio and onboarding of new industry talent into Department of Labor recognized apprenticeships, will ensure that Ohio can meet demand today and keep pace with the rapidly growing EV market. EVSE installation and maintenance is electrical work. The growth of the EV market will create more career opportunities for electricians in Ohio, as shown in **Table 37**.

Table 37: Electrician Career Opportunities

EVITP Ohio Specific Success and Scalability	
EVITP Certified Contractors	In Ohio, over 750 qualified electricians have advanced EVITP certified skills, with hundreds more graduating annually from U.S. Department of Labor recognized apprenticeship programs. Additionally, the EVITP Contractor network in Ohio includes 83 different affiliated contractors who already utilize EVITP trained and certified electricians to perform EV work in all market sectors. Visit www.evitp.org to review the complete list of Ohio affiliated contractors.
Focus on Diversity & Inclusion	EVITP strongly supports that the future EV workforce of qualified electricians be accessible and inclusive. In 2021, EVITP was asked to partner on the Bloomberg Philanthropy American Cities Climate Challenge in 26 select U.S. markets, including Columbus and Cincinnati, to award Scholarships for EVITP training to qualified electricians, with a focus on 50% of the electricians included in the program represent Women, Black, Indigenous People or People of Color.
Online, In-Person, & Hybrid Models	EVITP now provides the full 20-hour course material for qualified electricians (8,000+ hours of experience) online through a Computer Mediated Learning LMS platform. Upon successful course completion, qualified electricians take a 2-hour proctored exam online or at a training partner physical location. Exams must be passed at 75% for certification.

Source: EVITP

Based on EV infrastructure needs today, Ohio is in a strong position in terms of electrical contractor engagement and electrician readiness. Given the significant growth expected in the EV market in the next few years, significant expansion of EVITP training is warranted for qualified electricians. The good news for Ohio is that the EVITP program is active, scalable, and easy to access for qualified electricians. However, it is worth noting that the requirement of 8,000 hours of electrical field

experience for the EVITP certification is challenging. Efforts are underway to develop new and emerging credentials in the field. ChargerHelp! And SAE International's Sustainable Mobility Solutions have partnered to assist in EV charging infrastructure workforce development, with a certification curriculum expected to be ready for enrollment by mid-2023.

11.4 Ohio TechCred Program | Reimbursed Training for Credential Programs

Multiple Ohio agencies are collaborating to ensure Ohio's electricians are eligible to receive national best practice training as described in the EVITP section above. Agency staff from ODOT, the Governor's OWT, and the Department of Development, are coordinating on providing additional financial reimbursement support for EVITP through the state's existing TechCred program.

The TechCred program helps Ohioans learn new skills and helps employers build a stronger workforce with the skills needed in a technology-infused economy. These technology-focused, credentials take a year or less to complete and prepare current and future employees for the technology jobs Ohio employers need. Ohio's TechCred Program allows employers who submit successful applications to be reimbursed up to $2,000 per credential when current or prospective employees complete eligible technology-focused credentials, up to $30,000 per employer during each application period, and up to $180,000 per year. To date, 345 employers were approved for funding, providing the opportunity for Ohioans to earn 4,237 tech-focused credentials. As part of Ohio's EV workforce strategy, the EVITP certification course has been added to the TechCred program. To date, 50 EVITP credentials have been approved through TechCred and 1 business has utilized TechCred for EVITP.

11.5 Governor's Office of Workforce Transformation | Statewide Workforce Coordination

Ohio is uniquely well-resourced in workforce development, with a robust set of successful projects and initiatives helping build and grow a competitive and well-trained workforce for Ohio's economy. Heading up Ohio's diverse workforce development programs and resources is the Ohio Governor's OWT, directed by Lieutenant Governor Jon Husted, with a mission to connect Ohio's business, training, and education communities to build a dynamically skilled, productive, and purposeful workforce. The OWT directly coordinates a series of initiatives to fulfill its mission as described in **Table 38**.

Table 38: Office of Workforce Transformation Initiatives

Initiative	Description
Individual Microcredential Assistance Program (IMAP)	The IMAP helps Ohioans who are low income, partially unemployed, or totally unemployed participate in a training program to receive a credential at no cost.
Strengthening Ohio's Broadband & 5G Workforce	The Governor's OWT and BroadbandOhio published a strategic plan that outlines a detailed framework and roadmap to establish a skilled workforce that will implement broadband and 5G.
Industry Sector Partnership Grants	Ohio's Industry Sector Partnership grant program helps fund collaborative efforts between local business, education, training providers, and community stakeholders.
State Approved, Industry Recognized Credentials	Members of the business community can inquire with the Governor's Office of Workforce Transformation about industry-recognized credentials that are approved by the Ohio Department of Education and the Ohio Department of Higher Education.
High School Tech Internship Pilot Program	The High School Tech Internship Pilot Program is an opportunity for Ohio employers to hire high school interns and receive reimbursement for their wages.

Initiative	Description
TechCred	The TechCred Program will help Ohioans learn new skills and help employers build a stronger workforce with the skills needed in a technology-infused economy.
OhioMeansJobs.com	OhioMeansJobs.com is Ohio's free, online career counseling center that connects businesses to job seekers and provides career services to all Ohioans.
TopJobs	Ohio's Top Jobs List is a customizable, online tool to help guide Ohioans on career pathways that meet their individual needs and goals and allow them to take advantage of employment opportunities available in our state.
Ohio to Work	Career service professionals at Ohio to Work will provide you with free guidance and resources to get you on the path to finding a stable career.
Choose Ohio First	The Choose Ohio First Scholarship is designed to strengthen Ohio's competitiveness within STEM disciplines and STEM education.
Career Pathways Resource	The "Find Your Career Pathway" resource encourages Ohio students, parents, and schools to start conversations about the best pathway to a successful career in Ohio.
Career Resource Navigator	This resource can help people find opportunities to explore actual outcomes for people who recently completed training and education programs and links to other career resources.
Innovative Workforce Incentive Program	The Innovative Workforce Incentive Program (IWIP) is designed to expand student access and provide new opportunities for the next generation of the workforce.
ApprenticeOhio	Ohio offers apprenticeship opportunities in traditional fields such as construction and manufacturing and in nontraditional apprenticeship fields such IT and health care.
Choose Ohio First	The Choose Ohio First (COF) program will provide scholarships to boost Ohio's efforts to strengthen the state's workforce in the STEM field.

Note: More information and resources can be found at: https://workforce.ohio.gov/initiatives
Source: Ohio Office of Workforce Transformation

In addition, in collaboration with OWT, DriveOhio manages a portfolio of smart mobility workforce development programs, from Pre-K to PhD. As reinforced in Ohio Executive Order 2019-26D, DriveOhio will "coordinate with the Governor's OWT and the Departments of Higher Education, Job and Family Services, and the Department of Development to prepare Ohio's workforce for the transition of transportation-related jobs that will be needed in the future." DriveOhio's workforce development program is strongly committed to diversity and inclusion, reflected through inclusive STEM career outreach programs and community partnerships.

11.6 Ohio's EV Workforce | Strategy and Action Plan

To best position Ohio's economy and workforce for success and to manage potential risks during the EV transition, the following EV workforce strategy will be implemented (see **Table 39**), under the leadership of the Governor's OWT, with support from a wide variety of state agencies, employers, educators, and workforce development stakeholders across Ohio.

Table 39: Planned EV Workforce Activities

EV & EVSE Workforce	Description of Workforce Category and Key Considerations
Conduct an **EV Industry and Workforce Needs Assessment**, gathering input from key stakeholders including employers, workers, educators, communities, and policymakers.	**Objectives** will include identification and refinement of economic development strategies, manufacturing asset needs, EV workforce skills, and education resource needs. **Activities** will include listening sessions, regional workshops, and action reports. **Funding** sources will include Industry-Sector Partnership grants, local and regional planning resources, and private investment.
Oversee **EV Training and Curriculum Development**, in response to the findings and recommendations from the Industry and Workforce Needs Assessment	**Objectives** will include development of new and updated curriculum that will address EV workforce skill requirements and education resources identified. **Activities** will include EV curriculum, training course development, and programs. **Funding** sources will include Industry-Sector Partnership grants, Ohio Higher Ed RAPIDS grants, Ohio TechCred (for pilot programs), and private investment.

EV & EVSE Workforce	Description of Workforce Category and Key Considerations
Manage **EV Workforce Program Delivery & Promotion**, implementing new and updated training, curriculum, and increasing awareness with Ohio stakeholders	**Objectives** will include up-skilling of incumbent workers and training for emerging workers to develop the new EV skills previously identified. **Activities** will include training, course delivery, and statewide outreach. **Funding** sources will include Ohio TechCred, Ohio Higher Ed RAPIDS grants (if applicable), and private investment.

Source: DriveOhio, Ohio Governor's Office of Workforce Transformation

11.7Ohio's EV Workforce | FY 2024-2025 State Budget

Alongside the initiatives mentioned above, Governor DeWine's recent budget proposal suggests allocating a historic $684.4 million (spanning two fiscal years) towards new or continued investments in workforce-related initiatives. It is important to note that the information presented in this section is based on the available data up to April 2023 and is subject to potential changes as the budget has not yet been finalized. Certain provisions outlined in the budget are found in **Table 40.**

Table 40: Workforce Provisions in the Proposed State Budget for FY 2024-2025

Provision	Description
Career-Tech Equipment	The governor's budget proposes $100 million to purchase equipment for career-tech centers so students are trained on modern equipment they will encounter in the workplace. The funding will be prioritized for programs that support Ohio's Top Jobs List and credentialing programs in sectors that urgently need employees.
Career-Tech Facility Expansion	The budget would authorize $200 million to support construction projects to establish or expand career-technical education facilities.
Credentials for High School Students	More than $26 million per fiscal year would be used to fund industry-recognized credentials for students. This funding would also finance a new initiative – the Work-based Learning Incentive Program – to promote hands-on student interactions with industry professionals in workplace settings.
WorkFORCE Ohio	The DeWine-Husted budget proposes $30 million per fiscal year to create WorkFORCE Ohio, a follow-up to the governor's recent executive order to assess Ohio's critical educational and training needs.
Super RAPIDS	Using one-time federal funding of $200 million, the budget would create a new initiative to expand the Regionally Aligned Priorities in Delivering Skills (RAPIDS) program, allowing Ohio Technical Centers to help strengthen education and training opportunities that maximize workforce development in defined areas.
Electric Vehicle Charging Infrastructure	The budget includes $2 million for the deployment of training and credentialing programs related to the emerging field of EV charging. This is considered crucial to developing Ohio's EV workforce strategy.
Industry Sector Partnership Grants	By increasing funding for ISPs by $10 million over current levels (from $2.5 million per fiscal year to $7.5 million per fiscal year), the governor's budget would help manufacturers expand regional talent strategies.
Internship Pilot Program	The budget proposes $2.5 million per fiscal year to support an internship pilot program to connect career-tech and college students with employers to facilitate more work-based learning opportunities.
TechCred	The budget would provide $25.2 million per fiscal year for TechCred ($50.4 million over the biennium) – an increase of about $20 million a year over current levels.

Source: DriveOhio

11.8DriveOhio Workforce Initiatives

DriveOhio is preparing Ohio's talent for the future of smart mobility (including electric vehicles) with a portfolio of workforce development programs, from Pre-K to PhD. Examples include:

Smart Mobility Ambassador: this program engages students of all ages in conversations about next-generation transportation career opportunities across Ohio. High school educators recruit high school students to serve as ambassadors; K-6 afterschool educators coordinate and facilitate DriveOhio's STEM outreach activities; and Smart Mobility Ambassadors teach younger students about smart mobility technology and lead hands-on STEM activities. Benefits for students include job connections, career-based networking, and service and/or work-based learning hours. Benefits for educators include continuing education credits, alignment with 21st Century Skills, and development of Ohio's emerging workforce. In 2023, DriveOhio launched free "train-the-trainer" e-learning as part of the new Smart Mobility Training Academy on the ODOT Local Technical Assistance Program (LTAP) website, and published a wide variety of free STEM education resources (including lesson plans and videos) on the DriveOhio Smart Mobility Ambassador website. This information will be cross-listed on the INFOhio K-12 digital resource platform, to ensure broad access to these free materials for educators and students across Ohio.

Smart Mobility Career Connections – this program, in alignment with the Ohio Department of Education Career Connections initiative, provides Ohio employers an opportunity to connect with middle school and high school career counselors and their students who are interested in smart mobility career opportunities. A series of activities co-hosted by DriveOhio, in collaboration with education partners, will encourage students to get involved with career exploration and networking. In Fall 2023, DriveOhio will kick off a monthly webinar series with employers from across Ohio, with topics including electric vehicles and charging stations.

Smart Mobility Innovator – this program brings DriveOhio projects into Ohio higher education and K-12 classrooms. From capstone projects to innovation challenges, the program offers students and educators the opportunity to develop advanced mobility solutions in their communities while exploring potential career pathways. Since 2018, DriveOhio has sponsored a wide variety of capstone projects with teams of higher education and high school students across Ohio, on topics including EV equity and smart mobility hubs. In 2023, DriveOhio will release a request for proposals to expand this program statewide over the next several years.

Chapter 12 Cybersecurity

Cybersecurity and personal privacy are fundamental to the State of Ohio and ODOT in order to protect the data collected, managed, and stored through Ohio's contracts. Cybersecurity and personal privacy risk have been a major consideration in how the NEVI program is implemented as this program will involve cybersecurity risks for the EV chargers and the people using them. The State of Ohio's Department of Administrative Services (DAS) and the DAS Office of Information Security and Privacy have longstanding cybersecurity policies and requirements for all state agencies to follow throughout procurement. These policies and requirements are rooted in guidance from the National Institute of Standards and Technology (NIST) and the unique needs of Ohio. DAS has been a partner and resource to ODOT as procurement decisions were made on contracting methodologies to ensure the proper cybersecurity considerations were developed into the RFP and will be developed into the contract to ensure the ongoing ability to address cybersecurity through the length of the contract.

Given the earlier contractual discussion in **Chapter 5**, cybersecurity responsibility will lie in the hands of the third party contractors including owning, operating, and maintaining the EV chargers and the data they produce. Therefore, through the RFP process, each Proposer will be asked to submit a draft Data Interface Plan with their response. This draft plan will describe processes and procedures related to data sharing responsibilities and identify critical cybersecurity and data safety issues with appropriate measures to manage cybersecurity for all parties involved.

After selection and prior to contract execution, a Privacy Impact Assessment will be completed with the Proposer, ODOT and ODOT's Data Governance and Security team. After P3 agreement execution, the NEVI Developer shall share the following, at a minimum, through a Data Interface Plan:

- how cybersecurity will be assessed annually throughout the P3 Agreement term;
- results in cybersecurity testing (not proprietary information that would make the overall system vulnerable);
- how system updates, including security updates, will affect end users; and
- proposed protocols of notifying ODOT of any security or privacy breach.

The Data Interface Plan will also incorporate guidance on risk assessments and access management for personnel involved with the charging network, including contractors and service providers. The NEVI Developer shall describe their planned cybersecurity strategies consistent with this document including but not limited to PCI compliance, physical security and secure communication methods. The NEVI Developer shall submit the original and each annual update of the Data Interface Plan to ODOT for approval.

The NEVI Developer will comply with any local, state, or federal laws as they relate to cybersecurity and privacy. All cybersecurity measures taken by the NEVI Developer must also be followed by any subcontractors.

Chapter 13 Program Evaluation

ODOT will require NEVI funded EVSE owners to operate networked EVSE on Open Charge Point Protocol Networks and provide charging station usage reports. The reporting information submitted will identify aggregate utilization data for the previous reporting period, and for each NEVI compliant EVSE funded by ODOT.

ODOT will seek to utilize EVSE report information, detailed in **Section 8.3,** to perform program evaluation. This may include the development of an annual report on the NEVI Program progress or the development of an online dashboard, such as developed by Energetics' US DOE funded "EV-WATTS" project as shown in **Figure 31**.

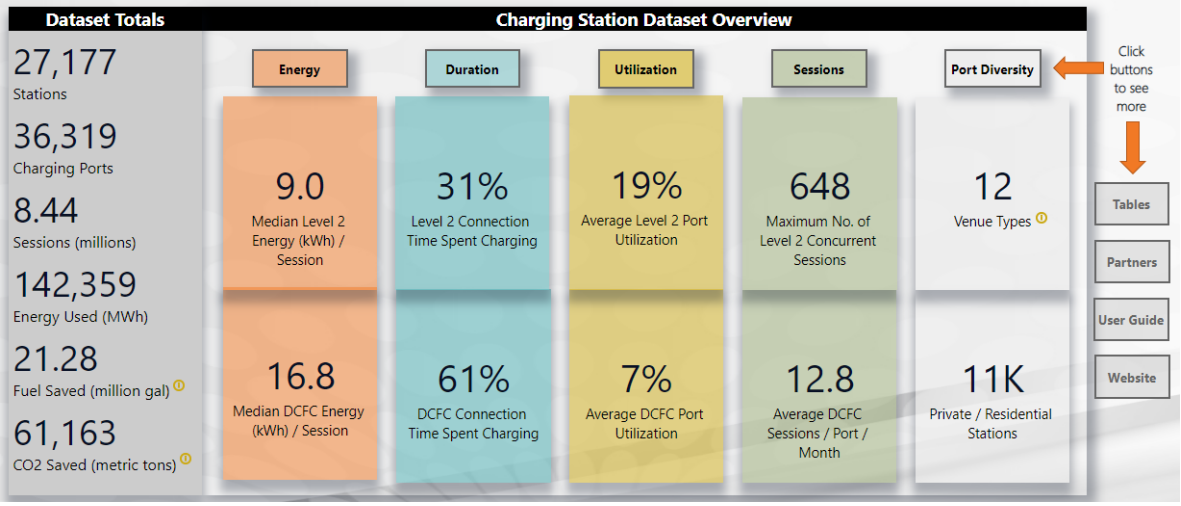

Figure 31: Energetics "EV-WATTS" Example EVSE Data Reporting Dashboard
Source: USDOE

In addition to EVSE data reporting, ODOT will also evaluate equity metrics discussed in **Chapter 10**. This process has generated an initial set of benefits, metrics and data sources that will be used to measure the impact on DACs, shown in **Table 41**: Benefits, Metrics and Data Sources. These items are preliminary and may be revisited to incorporate additional insights and priorities as DAC outreach continues.

Table 41: Benefits, Metrics and Data Sources

Benefit	Metric	Data Source
1. Improve clean transportation access through the location of chargers	Distance to nearest charger from DAC Charger utilization by location	Justice40 mapping (for DAC locations); EV charger locations from NEVI plan/implementation
2. Reduce environmental exposures to transportation emissions	Air quality metrics Emissions reduction potential based on shift from ICE to EVs	ODOT traffic volumes/projections for AFCs; Ohio EPA air quality reports; EPA MOVES Model
3. Provide charging infrastructure for shared-ride vehicles	Chargers located at or near vehicle bases/along routes	EV charger locations from NEVI plan/implementation; ride share location/route data

Benefit	Metric	Data Source
4. Increasing community cohesion through program design and public involvement	Number of meaningful public involvement activities engaging members of disadvantaged communities	ODOT engagement records; community organization feedback
5. Establishing community-based partnerships	Number of partnerships developed / maintained with community-based organizations for NEVI program	ODOT/JobsOhio records
6. Increase the clean energy job pipeline, job training, and enterprise creation in disadvantaged communities	Number of clean energy-related job training opportunities leveraging charger planning, installation, operation and/or maintenance. Number of EVITP certifications.	JobsOhio, community colleges/education partners, community organizations/MPOs, EVITP, OWT

Source: DriveOhio

As an example of how benefits will be measured, the goal of benefit 1 shown in **Table 41** is to improve clean transportation access by locating NEVI chargers either in or in proximity to DACs and measuring the charger utilization in these locations. To evaluate the distance of the selected candidate sites, the sites will be added to the GIS file containing the Ohio EV Charger Coverage Gap Planning Map. GIS tools will be utilized to calculate the distances between the DACs and the nearest chargers. The number and the percentage of chargers within a DAC or within a 1-mile distance from a DAC will be highlighted, as well as an analysis of incremental distances from a charger to the nearest DAC. Note that only a small portion of the interstates fall within a DAC. There are not many opportunities for interstate chargers to directly serve a DAC. More opportunities will be available for the US/State Route deployment phase and the discretionary phase.

Sample analysis for the existing NEVI compliant chargers:

- The number of existing NEVI compliant chargers in Ohio is 13 (2023).
- The number of existing NEVI compliant chargers in Ohio located within a DAC is 0 (2023).
- The number of existing NEVI compliant chargers in Ohio located within a 1-mile distance from a DAC is 4 (2023). (Electrify America – Walmart 3262 Cambridge, Electrify America – Sheetz 248, Electrify America – Meijer #224 Cincinnati, Electrify America, Sheffield Crossing Station).
- The percentage of existing NEVI compliant chargers in Ohio located within a 1-mile distance from a DAC is 31% [4 out of 13].
- The percentage of existing NEVI compliant chargers in Ohio located within incremental distances from a DAC.

Sample analysis for the future NEVI compliant chargers:

- The number of future (and planned) NEVI compliant chargers in Ohio in 2026.
- The number of future (or planned) NEVI compliant chargers in Ohio located within a DAC in 2026.
- The number of future (or planned) NEVI compliant chargers in Ohio located within a 1-mile distance from a DAC in 2026.
- The percentage of future (or planned) NEVI compliant chargers in Ohio located within a 1-mile distance from a DAC in 2026.
- The percentage of future (or planned) NEVI compliant chargers in Ohio located within incremental distances from a DAC.

Chapter 14 Discretionary Exceptions

At this time, ODOT has not identified any requested exceptions from the requirement that charging infrastructure is installed every 50-miles along that State's portion of the Interstate Highway System within 1 travel mile of the Interstate. As ODOT intends to work with third party EVSE applicants for NEVI funding and ultimate award of funds to third party EVSE owner-operators, ODOT will monitor all future Ohio NEVI locations for requested discretionary exemptions and seek to gather all relevant information from prospective site hosts about the need for any such exemptions. In the case a need for a discretionary exemption request arises, ODOT will work to provide all necessary information to the Joint Office for approvals.

Chapter 15 Next Steps

This updated *Ohio Electric Vehicle Infrastructure Deployment Plan* complies with FHWA's TBD, 2023, revised NEVI guidance. It describes the progress of phases of deployment and how ODOT will continue to leverage previous EV strategy for future phases (i.e., non-AFC DCFC charger priorities, freight charging).

The plan incorporates stakeholder perspective at all levels to support the Plan's defined goals and outcomes and will continue to do so as each phase is planned and implemented. ODOT will also continue to access how best to support equity communities through the program.

With motor vehicles being one of Ohio's largest export commodities and as the top producer of engines and 2nd largest producer of transmissions in North America, the workforce development aspects of this transition are also critical to Ohio.

ODOT's Alternative Fuel Vehicle dashboard summarizes vehicle registration data each month to help stakeholders plan for the coming clean energy transportation transition. ODOT will supplement this dashboard to continue their data driven approach when it comes to charging infrastructure.

ODOT is committed to following and annually updating this Plan as it leverages necessary resources to support NEVI deployment.